UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): March 7, 2023

Carisma Therapeutics Inc.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**001-36296**	**26-2025616**
(State or other jurisdiction of incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**
3675 Market Street, Suite 200 Philadelphia, PA		**19104**
(Address of Principal Executive Offices)		**(Zip Code)**

Registrant's telephone number, including area code: (267) 491-6422

Sesen Bio, Inc.
245 First Street, Suite 1800
Cambridge, MA 02142
(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (*see* General Instruction A.2 below):

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	**Trading Symbol(s)**	**Name of exchange on which registered**
Common Stock, $0.001 par value	**CARM**	**The Nasdaq Stock Market LLC**

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Introductory Note

On March 7, 2023, Carisma Therapeutics Inc. (formerly Sesen Bio, Inc.) (the "**Company**") completed its business combination in accordance with the terms of the Agreement and Plan of Merger and Reorganization, dated as of September 20, 2022, as amended by the First Amendment thereto dated as of December 29, 2022 and the Second Amendment thereto dated as of February 13, 2023 (as amended, the "**Merger Agreement**"), by and among the Company, CTx Operations, Inc. (formerly CARISMA Therapeutics Inc.) ("**Carisma**") and Seahawk Merger Sub, Inc., a Delaware corporation and a wholly owned subsidiary of the Company ("**Merger Sub**"), pursuant to which, among other matters, Merger Sub merged with and into Carisma, with Carisma continuing as a wholly owned subsidiary of the Company and the surviving corporation of the merger (the "**Merger**"). Pursuant to the Merger Agreement, the Company changed its name from "Sesen Bio, Inc." to "Carisma Therapeutics Inc." Following the completion of the Merger, the business conducted by the Company became primarily the business conducted by Carisma, which is a biopharmaceutical company dedicated to developing a differentiated and proprietary cell therapy platform focused on engineered macrophages, cells that play a crucial role in both the innate and adaptive immune response.

Item 1.01. Entry into a Material Definitive Agreement.

Prior Carisma Agreements

As a result of the Merger, the following agreements of Carisma effectively became agreements of the Company.

Moderna Collaboration Agreement

In January 2022, Carisma entered into a Collaboration and License Agreement (the "**Moderna Collaboration Agreement**") with ModernaTX, Inc. ("**Moderna**") providing for a broad strategic partnership to discover, develop and commercialize in vivo engineered CAR-M therapeutics for up to 12 oncology programs.

In collaboration with Moderna, Carisma has established an approach that uses Moderna's LNP/mRNA technology, together with Carisma's CAR-M platform technology, to create novel in vivo oncology medications.

Under the Moderna Collaboration Agreement, the parties initiate research programs during a research term, focused on the discovery and research of products directed to biological targets. Either party may nominate a target for inclusion in a research program, subject to certain exclusions. Targets included in a research program pursuant to designated procedures are referred to as a "research target". Moderna may replace research targets pursuant to designated procedures. The first four research targets have been nominated and all programs are currently in the discovery phase at Carisma. Moderna funds the cost of Carisma's activities in accordance with an agreed research budget.

Moderna has the right to designate up to 12 research targets as development targets during a specified development target nomination period upon payment of a development target designation milestone payment. Moderna can replace development targets with research targets during a specified period of time. If Moderna exercises its right to designate a development target, Moderna will have a worldwide, exclusive license under patents and know-how controlled by Carisma to develop and commercialize products directed to the applicable development target, subject to certain diligence obligations.

Commencing a specified time after the effective date of the Moderna Collaboration Agreement, Moderna will have the right to nominate targets relating to diseases outside the field of oncology for inclusion in research programs in specified circumstances. Such right is subject to the same exclusions as Moderna's right to nominate other targets for inclusion in research programs.

During the term of the Moderna Collaboration Agreement, Carisma and its affiliates are subject to various exclusivity obligations under which Carisma is not permitted to research, develop or commercialize particular products outside of the collaboration, including products for use as in vivo therapies in the field of oncology, products directed to any target included in the collaboration, or products containing a polypeptide provided by Carisma to Moderna in connection with a research program that are directed to any development target.

Under the terms of the Moderna Collaboration Agreement, Carisma received a $45.0 million up-front cash payment. Assuming Moderna develops and commercializes 12 products, each directed to a different development target, Carisma is also eligible to receive up to between $247.0 million and $253.0 million per product in development target designation, development, regulatory and commercial milestone payments. In addition, Carisma is eligible to receive mid to high single digit tiered royalties on net sales of any products that are commercialized under the agreement, which may be subject to reductions. Moderna has also agreed to cover the cost of certain milestone payments and royalties Carisma owes to a licensor under one of its intellectual property in-license agreements that Carisma is sublicensing to Moderna under the Moderna Collaboration Agreement, which royalties Moderna may deduct in part from any royalties owed to Carisma.

Unless earlier terminated, the Moderna Collaboration Agreement will expire upon the expiration of all royalty obligations thereunder. The royalty period for each product developed under the Moderna Collaboration Agreement will expire on a country-by-country basis upon the later of (1) the expiration of the last-to-expire valid patent claim of specified patents, (2) the expiration of regulatory-based exclusivity for such product in such country or (3) ten years after the first commercial sale with respect to such product in such country. Moderna has the right to terminate the Moderna Collaboration Agreement for convenience in its entirety or with respect to a specific product or target on ninety days' prior notice. Either Carisma or Moderna may terminate the Moderna Collaboration Agreement in its entirety if the other party is in material breach and such breach is not cured within the specified cure period, except in the case of Moderna's breach of its diligence obligations, termination by Carisma is limited to the applicable target and product. In addition, either Carisma or Moderna may terminate the Moderna Collaboration Agreement in the event of specified insolvency events involving the other party. As an alternative to termination in the event of Carisma's uncured material breach of certain sections of the agreement, Moderna has the option to continue the collaboration under the agreement with reduced payment obligations.

The foregoing description of the Moderna Collaboration Agreement does not purport to be complete and is qualified in its entirety by the full text of the Moderna Collaboration Agreement, which is filed herewith as Exhibit 10.1 and incorporated herein by reference.

University of Pennsylvania License Agreement

In November 2017, Carisma entered into a license agreement (as amended, the "**Penn License Agreement**") with the Trustees of the University of Pennsylvania ("**Penn**"), which was amended in February 2018, January 2019, March 2020 and June 2021. Pursuant to the Penn License Agreement, Penn granted Carisma (1) an exclusive, worldwide license, with specified rights to sublicense, under Penn's interest in specified patents related to CAR-M, (2) an exclusive, worldwide license, with specified rights to sublicense, under Penn's interest in specified patents related to CAR-M directed to mesothelin, and (3) a nonexclusive, worldwide license under Penn's interest in specified know-how related to CAR-M, with limited rights to sublicense only in combination with specified products or patents. These licensed patents and know-how arose primarily from research conducted by Dr. Saar Gill and Dr. Michael Klichinsky at the University of Pennsylvania, co-founders of Carisma. The foregoing licenses are subject to rights retained by Penn for specified non-commercial uses and rights retained by the United States government. Under the Penn License Agreement, Carisma is obligated to use commercially reasonable efforts to pursue development and commercialization of at least one CAR-M product in oncology and non-oncology fields.

Carisma is responsible for paying Penn an annual license maintenance fee in the low tens of thousands of dollars, payable until Carisma's first payment of a royalty. Carisma is required to pay Penn up to $10.9 million per product in development and regulatory milestone payments, up to $30.0 million per product in commercial milestone payments, and up to an additional $1.7 million in development and regulatory milestone payments for the first CAR-M product directed to mesothelin. While the agreement remains in effect, Carisma is required to pay Penn low to mid-single digit percentage tiered royalties on annual net sales of licensed products, which may be subject to reductions. Penn is guaranteed a minimum royalty payment amount in the low hundreds of thousands of dollars for each year after the first commercial sale of a licensed product. Carisma must also pay Penn a percentage in the mid-single digits to low double digits of certain types of income Carisma receives from sublicensees. In addition, Carisma is required to pay Penn an annual alliance management fee in the low tens of thousands of dollars, ending after several years, unless Carisma provides funding to Penn for research and development activities that extend beyond a specified date, in which case Carisma will continue to owe the alliance management fee for each year in which Carisma continues to fund such activities. Carisma also paid Penn an upfront fee in the low hundreds of thousands of dollars for the license to the patents related to the mesothelin binder that is incorporated into the CAR design for Carisma's mesothelin product candidate. Carisma is responsible for a pro rata share of costs relating to the prosecution and maintenance of the licensed patents.

The royalty period for each licensed product will expire on a product-by-product basis upon the later of (1) the expiration of the last-to-expire valid patent claim of the licensed patents covering such product in the country of sale or in the country of manufacture, or (2) the expiration of regulatory-based exclusivity for such product in the country of sale. The license agreement remains in effect until the later of (1) expiration or abandonment of the last licensed patent or (2) loss of regulatory exclusivity. Carisma may terminate the agreement for convenience upon thirty days' prior notice. Penn may terminate the agreement for Carisma's material breach, subject to a specified cure period, except for certain breaches for which Penn may terminate immediately. Penn may also terminate if Carisma becomes the subject of a specified insolvency event.

The foregoing description of the Penn License Agreement does not purport to be complete and is qualified in its entirety by the full text of the Penn License Agreement, which is filed herewith as Exhibit 10.2 and incorporated herein by reference.

New York University License Agreement

In July 2020, Carisma entered into a license agreement (the "**NYU License Agreement**") with New York University ("**NYU**"). NYU granted Carisma (1) an exclusive, worldwide license, with specified rights to sublicense, under NYU's interest in specified patents related to the Vpx-LV and (2) a nonexclusive, worldwide license, with specified rights to sublicense, under NYU's interest in specified know-how related to the Vpx-LV, in each case to develop, manufacture, use and sell products developed using the Vpx-LV (together, the "**NYU Licensed Products**"). The foregoing licenses are subject to rights retained by NYU to use, and to permit other non-commercial entities to use, the licensed patents and licensed know-how for educational and research purposes, as well as rights retained by the United States government. Under the NYU License Agreement, Carisma is obligated to use reasonable diligence to carry out a specified development plan and to obtain regulatory approval for NYU Licensed Products in the U.S. and each of the other countries in which Carisma or its sublicensees intend to produce, use, and/or sell NYU Licensed Products, as well as to begin the regular commercial production, use, and sale of the NYU Licensed Products in good faith in accordance with the development plan and to continue diligently thereafter to commercialize the NYU Licensed Products.

Carisma is required to pay NYU an annual license maintenance fee in the mid tens of thousands of dollars; up to $1,685,000 per NYU Licensed Product in development and regulatory milestone payments; and low single digit percentage tiered royalties on annual net sales of NYU Licensed Products on a country-by-country basis until the later of (1) 12 years after first commercial sale of an NYU Licensed Product in such country or (2) expiration of the last to expire licensed patent. Carisma must also pay NYU a percentage in the low single digits to low double digits of certain types of income Carisma receives from sublicensees or assignees of the agreement. Carisma is also responsible for all costs relating to the prosecution, maintenance, and defense of the licensed patents.

The NYU License Agreement remains in effect until the expiration of all royalty terms in all countries. Either party may terminate the NYU License Agreement for the other party's uncured material breach or insolvency or bankruptcy.

The foregoing description of the NYU License Agreement does not purport to be complete and is qualified in its entirety by the full text of the NYU License Agreement, which is filed herewith as Exhibit 10.3 and incorporated herein by reference.

Registration Rights Agreement

On March 7, 2023, immediately prior to the effective time of the Merger and in connection with the consummation of the pre-closing financing pursuant to which certain former stockholders of Carisma (the "**Carisma Investors**") purchased 1,964,101 shares of Carisma common stock at an aggregate purchase price of approximately $30.6 million, Carisma and the Carisma Investors entered into a Registration Rights Agreement (the "**Registration Rights Agreement**"), pursuant to which Carisma (i) agreed to register for resale the shares purchased by the Carisma Investors in the pre-closing financing (the "**Registrable Subscription Securities**"), and (ii) provided the Carisma Investors (A) the right to require the Company to register additional shares held by such Carisma Investors (the "**Registrable Existing Securities**") under specified circumstances and (B) the right to participate in future registrations of securities by the Company under specified circumstances. All of the shares of Carisma common stock held by the Carisma Investors immediately prior to the effective time of the Merger, including shares of Carisma common stock issued in connection with the pre-closing financing, were exchanged into shares of the Company's common stock at the effective time of the Merger.

Mandatory Registration Rights. As promptly as reasonably practicable and in any event within 60 days after the date of the Registration Rights Agreement, the Company is required to file a Registration Statement on Form S-3 with the Securities and Exchange Commission (the "**SEC**") to register all of the Registration Subscription Securities under the Securities Act of 1933, as amended (the "**Securities Act**"), subject to certain limitations. Following such filing, the Company will use its reasonable best efforts to have the Registration Statement on Form S-3 declared effective by the SEC and maintain such effectiveness continuously for a period up to the earlier of (i) three years from the date of the Registration Rights Agreement and (ii) the date that all Registrable Subscription Securities covered by such Registration Statement on Form S-3 have been sold or can be sold without restriction pursuant to Rule 144 promulgated by the SEC under the Securities Act ("**SEC Rule 144**") or another similar exemption under the Securities Act and without the requirement to be in compliance with subsection (c)(1) of SEC Rule 144 (or any successor thereto).

Demand Registration Rights. Under the Registration Rights Agreement, and subject to specified limitations set forth therein, the Carisma Investors have rights to certain customary demand and piggyback registration rights with respect to the Registrable Existing Securities. Such registration rights will terminate upon the earliest to occur of (i) such time as SEC Rule 144 or another similar exemption under the Securities Act is available for the sale of all of such Carisma Investor's Registrable Existing Securities and without the requirement to be in compliance with subsection (c)(1) of SEC Rule 144 (or any successor thereto) and (ii) the third anniversary of the date of the Registration Rights Agreement.

Expenses and Indemnification. Pursuant to the Registration Rights Agreement, the Company is required to pay all registration expenses (excluding underwriting discounts, selling commissions and stock transfer taxes). The Registration Rights Agreement contains customary cross-indemnification provisions, pursuant to which the Company is obligated to indemnify the Carisma Investors in the event of material misstatements or omissions attributable to the Company or certain violation or alleged violation by the Company under applicable securities laws, and the Company is not obligated to indemnify the Carisma Investors for material misstatements or omissions attributable to the Carisma Investors or violations or alleged violations by the Carisma Investors under applicable securities laws.

The foregoing description of the Registration Rights Agreement does not purport to be complete and is qualified in its entirety by the full text of the Registration Rights Agreement, which is filed herewith as Exhibit 10.4 and incorporated herein by reference.

Contingent Value Rights Agreement

On March 7, 2023, the Company entered into a Contingent Value Rights Agreement (the "**CVR Agreement**") with a rights agent ("**Rights Agent**") pursuant to which the Company's pre-Merger stockholders of record as of March 7, 2023 received one contingent value right in the form of a dividend (each, a "**CVR**") for each outstanding share of Company common stock held by such stockholders on such date. Each CVR represents the contractual right to receive contingent cash payments upon the receipt by the Company of (i) certain proceeds payable by Roche (as defined below), if any, pursuant to the Asset Purchase Agreement by and among the Company and F. Hoffmann-La Roche Ltd and Hoffman-La Roche Inc. (collectively "**Roche**"), dated July 15, 2022 (the "**Asset Purchase Agreement**"), upon the achievement by Roche of a specified milestone set forth in the Asset Purchase Agreement, and (ii) the proceeds from any sale of the Company's pre-Merger non-cash assets, including Vicineum, in each case subject to certain customary deductions, including for expenses and taxes.

The contingent payments under the CVR Agreement, if they become due, will be payable to the Rights Agent for subsequent distribution to the holders of the CVRs. In the event that no such proceeds are received, holders of the CVRs will not receive any payment pursuant to the CVR Agreement. There can be no assurance that any cash payment will be made or that any holders of CVRs will receive any amounts with respect thereto.

The right to the contingent payments contemplated by the CVR Agreement is a contractual right only and will not be transferable, except in the limited circumstances specified in the CVR Agreement. The CVRs will not be evidenced by a certificate or any other instrument and will not be registered with the SEC. The CVRs will not have any voting or dividend rights and will not represent any equity or ownership interest in the Company or any of its affiliates. No interest will accrue on any amounts payable in respect of the CVRs.

The foregoing description of the CVR Agreement does not purport to be complete and is qualified in its entirety by the full text of the CVR Agreement, which is filed herewith as Exhibit 10.5 and incorporated herein by reference.

Indemnification Agreements

In connection with the Merger, on March 7, 2023, the Company entered into indemnification agreements with each of its directors and executive officers. Each indemnification agreement provides for indemnification and advancements by the Company of certain expenses and costs relating to claims, suits or proceedings arising from each individual's service to the Company as an officer or director, as applicable, to the maximum extent permitted by applicable law.

The foregoing description of the indemnification agreements is qualified in its entirety by the full text of the form of indemnification agreement, which is filed herewith as Exhibit 10.6 and incorporated herein by reference.

Item 2.01. Completion of Acquisition or Disposition of Assets.

On March 7, 2023, the Company completed its business combination with Carisma in accordance with the terms of the Merger Agreement. Effective at 5:01 p.m. Eastern Time on March 7, 2023, the Company effected a 1-for-20 reverse stock split of its common stock (the "**Reverse Stock Split**") and implemented a reduction in the number of authorized shares of common stock to 100,000,000 (the "**Common Stock Reduction**"), effective at 5:02 p.m. Eastern Time, the Company completed the Merger, and effective at 5:03 p.m. Eastern Time, the Company amended and restated the Company's Restated Certificate of Incorporation to change the Company's name to "Carisma Therapeutics Inc." and to restate and integrate all prior amendments (the "**Restated Certificate of Incorporation**"). Unless noted otherwise, all references to share and per share amounts in this Current Report on Form 8-K reflect the Reverse Stock Split.

At the closing of the Merger, after taking into account shares of Carisma common stock purchased in connection with the pre-closing financing and the conversion of Carisma's $35.0 million outstanding convertible note, the Company issued an aggregate of approximately 29,880,400 shares of its common stock to Carisma stockholders (including 5,059,338 shares issued to the holder of the convertible note in accordance with the Convertible Note Conversion Agreement, dated as of September 20, 2022), based on an exchange ratio set forth in the Merger Agreement, resulting in approximately 40,254,672 shares of the Company's common stock being issued and outstanding immediately following the effective time of the Merger. The exchange ratio was determined in accordance with the Merger Agreement and was calculated using a formula intended to allocate the Company's pre-Merger stockholders and Carisma stockholders a percentage of the combined company. The Company also assumed all of the outstanding and unexercised stock options to purchase shares of Carisma common stock. The assumed options continue to be governed by the terms of the CARISMA Therapeutics Inc. 2017 Stock Incentive Plan, as amended (the "**Carisma 2017 Plan**"). Upon the closing of the Merger, the Company also assumed the Carisma 2017 Plan.

The issuance of shares of the Company's common stock to former stockholders of Carisma (other than shares of the Company's common stock issued in exchange for shares of Carisma common stock sold in the pre-closing financing) and upon conversion of Carisma's $35.0 million convertible note, was registered with the SEC on the Company's Registration Statement on Form S-4, as amended (File No. 333-267891) (the "**Registration Statement**"). The shares of the Company's common stock issued in exchange for shares of Carisma common stock sold in the pre-closing financing were issued in a transaction exempt from registration under the Securities Act in reliance on Section 4(a)(2) of the Securities Act and the rules promulgated thereunder.

The shares of the Company's common stock listed on The Nasdaq Stock Market, previously trading on The Nasdaq Capital Market through the close of business on Tuesday, March 7, 2023 under the ticker symbol "SESN," will commence trading on The Nasdaq Global Market, on a post-Reverse Stock Split adjusted basis, under the ticker symbol "CARM," on March 8, 2023. The Company's common stock is represented by a new CUSIP number: 14216R 101.

The foregoing description of the Merger Agreement does not purport to be complete and is qualified in its entirety by the full text of the Merger Agreement, which was filed as Exhibit 2.1 on the Current Report on Form 8-K filed with the SEC on September 21, 2022 and is incorporated herein by reference.

Item 3.02. Unregistered Sales of Equity Securities.

To the extent required by Item 3.02 of Form 8-K, the information set forth in Items 1.01 and 2.01 of this Current Report on Form 8-K regarding the issuance of shares with respect to the shares of the Company's common stock issued in exchange for shares of Carisma common stock sold in the pre-closing financing is incorporated herein by reference.

Item 3.03 Material Modification to Rights of Security Holders.

The information set forth in Items 2.01, 5.01 and 5.03 of this Current Report on Form 8-K is incorporated herein by reference.

As previously disclosed on the Company's Current Report on Form 8-K filed with the SEC on March 2, 2023 (the "**Reverse Stock Split Form 8-K**"), effective at 5:01 p.m. Eastern Time on March 7, 2023, the Company effected the Reverse Stock Split and implemented the Common Stock Reduction. The disclosure set forth in the Reverse Stock Split Form 8-K under "Item 3.03. Material Modification to Rights of Security Holders," including Exhibit 3.1 incorporated by reference therein, is incorporated herein by reference.

Item 4.01. Changes in Registrant's Certifying Accountant.

(a) Prior to the completion of the Merger, Ernst & Young LLP served as the independent registered public accounting firm of Sesen Bio, Inc. On March 6, 2023, the Audit Committee (the "**Audit Committee**") of the Board of Directors of Sesen Bio, Inc. dismissed Ernst & Young LLP as its independent registered public accounting firm, effective as of the effective time of the Merger.

The reports of Ernst & Young LLP on Sesen Bio, Inc.'s consolidated financial statements for the past two fiscal years did not contain an adverse opinion or disclaimer of opinion, nor were they qualified or modified as to uncertainty, audit scope, or accounting principles.

In connection with the audits of Sesen Bio, Inc.'s consolidated financial statements for the fiscal years ended December 31, 2022 and 2021, and in the subsequent interim period through March 7, 2023, there were no: (1) disagreements with Ernst & Young LLP on any matters of accounting principles or practices, financial statement disclosure, or auditing scope and procedures, which disagreements if not resolved to the satisfaction of Ernst & Young LLP, would have caused Ernst & Young LLP to make reference to the matter in its report.

The Company delivered a copy of this Current Report on Form 8-K to Ernst & Young LLP and requested a letter addressed to the SEC stating whether it agrees with the above statements. A copy of that letter, dated March 7, 2023 is filed as Exhibit 16.1 to this Form 8-K.

(b) On March 7, 2023, the Audit Committee approved the engagement of KPMG LLP as the Company's independent registered public accounting firm for the year ended December 31, 2023.

During the years ended December 31, 2022 and 2021, neither the Company, Carisma, nor anyone on their behalf, consulted with KPMG LLP, regarding either (i) the application of accounting principles to a specific transaction, completed or proposed, or the type of audit opinion that might be rendered on Carisma's financial statements, and neither a written report nor oral advice was provided to Carisma that KPMG LLP concluded was an important factor considered by Carisma in reaching a decision as to any accounting, auditing or financial reporting issue or (ii) any matter that was either the subject of a disagreement (as defined in Item 304(a)(1)(iv) of Regulation S-K and the related instructions) or a reportable event (as described in Item 304(a)(1)(v) of Regulation S-K).

Item 5.01. Changes in Control of Registrant.

The information set forth in Item 2.01 of this Current Report on Form 8-K regarding the Merger and the information set forth in Item 5.02 of this Current Report on Form 8-K regarding the Board of Directors (the "**Board**") and executive officers following the Merger are incorporated herein by reference.

Item 5.02. Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

Directors

In accordance with the Merger Agreement, effective as of the closing of the Merger, Thomas R. Cannell, Jay S. Duker, M.D., Peter K Honig, M.D., Michael A.S. Jewett, M.D., Jason A. Keyes and Carrie L. Bourdow resigned from the Board and committees of the Board on which they respectively served, which resignations were not the result of any disagreements with the Company relating to the Company's operations, policies or practices.

In accordance with the Merger Agreement, effective as of the effective time of the Merger, the size of the Board was increased to seven members and the Board and its committees were reconstituted, consisting of six directors designated by Carisma, who are Steven Kelly, Regina Hodits, Ph.D., Briggs Morrison, M.D., Björn Odlander, M.D., Ph.D., Chidozie Ugwumba and Sanford Zweifach, and one director designated by the Company, who is Michael Torok.

Regina Hodits, Ph.D. and Björn Odlander, M.D., Ph.D. were appointed as Class III directors, whose terms expire at the Company's 2023 annual meeting, Michael Torok and Chidozie Ugwumba were appointed as Class I directors, whose terms expire at the Company's 2024 annual meeting, and Steven Kelly, Briggs Morrison, M.D. and Sanford Zweifach were appointed as Class II directors, whose terms expire at the Company's 2025 annual meeting. Sanford Zweifach was appointed as the Chair of the Board.

In addition, Chidozie Ugwumba, Regina Hodits, Ph.D., and Sanford Zweifach were appointed to the Audit Committee, and Chidozie Ugwumba was appointed the Chair of the Audit Committee. Briggs Morrison, M.D., and Sanford Zweifach were appointed to the Compensation Committee of the Board (the "**Compensation Committee**"), and Briggs Morrison was appointed the Chair of the Compensation Committee. Björn Odlander, M.D., Ph.D. and Sanford Zweifach were appointed to the Nominating and Corporate Governance Committee of the Board (the "**NCG Committee**"), and Björn Odlander, M.D., Ph.D. was appointed the Chair of the NCG Committee. Regina Hodits, Ph.D. and Briggs Morrison, M.D. were appointed to the Science Committee of the Board (the "**Science Committee**"), and Regina Hodits, Ph.D. was appointed the Chair of the Science Committee.

In connection with the execution of the Second Amendment to the Merger Agreement, which amendment included Michael Torok as the Company's designee to the Board in place of Dr. Thomas R. Cannell, D.V.M., on February 13, 2023, the Company and Carisma entered into a voting and support agreement (the "**Voting and Support Agreement**") with Bradley L. Radoff and Michael Torok (together with their affiliates, the "**Investor Group**"), pursuant to which the Investor Group agreed to vote their shares of Company common stock in favor of the adoption and approval of the Merger Agreement and the transactions contemplated thereby and all related proposals.

Other than pursuant to the Merger Agreement and the Voting and Support Agreement, there were no arrangements or understandings between the Company's newly appointed directors and any person pursuant to which they were elected. None of the Company's newly appointed directors has a direct or indirect material interest in any transaction required to be disclosed pursuant to Item 404(a) of Regulation S-K.

Biographical information for each of the above named directors is set forth below.

Steven Kelly, age 57, served as Carisma's President and Chief Executive Officer and as a member of the Carisma board of directors since February 2018. Prior to joining Carisma, Mr. Kelly served as Chief Executive Officer of Pinteon Therapeutics, a biotechnology company, from April 2014 to July 2015 and as the Chief Executive Officer of Theracrine, Inc., a biopharmaceutical company, from June 2011 to August 2012. Mr. Kelly currently serves on the board of directors of Artelo Biosciences, Inc. (Nasdaq: ARTL). Mr. Kelly received a B.S. from the University of Oregon and an M.B.A. from Cornell University. The Company believes Mr. Kelly is qualified to serve as a member of the Board because of his extensive knowledge of the Company based on his current role as its President and Chief Executive Officer, as well as his significant biopharmaceutical industry and management experience.

Regina Hodits, Ph.D. served as a member of the Carisma board of directors since June 2018. Dr. Hodits has served as a Managing Partner at Wellington Partners, a venture capital firm investing in companies mainly in areas of technology, life sciences and digital media, since 2010. Prior to that, Dr. Hodits served as Partner of Atlas Ventures from 2004 to 2010. She currently serves on the board of directors of Onward Medical. Dr. Hodits received a Master's degree in Chemical Engineering and a Ph.D. in biochemistry from Technical University of Vienna, Austria. The Company believes Dr. Hodits is qualified to serve as a member of the Board because of her scientific background and training in biochemistry, extensive experience with biopharmaceutical companies and service on the boards of other biopharmaceutical companies.

Briggs Morrison, M.D. served as a member of the Carisma board of directors since July 2020. Dr. Morrison has served as President, Head of Research and Development of Syndax Pharmaceuticals Inc., a biopharmaceutical company, since February 2022; he was previously Chief Executive Officer of Syndax Pharmaceuticals Inc. from June 2015. Dr. Morrison currently serves on the boards of directors of Repare Therapeutics Inc. (Nasdaq: RPTX), Werewolf Therapeutics Inc. (Nasdaq: HOWL), Arvinas, Inc. (Nasdaq: ARVN) and Syndax Pharmaceuticals Inc. (Nasdaq: SNDX). Dr. Morrison received an M.D. from the University of Connecticut and a B.S. in Biology from Georgetown University. The Company believes Dr. Morrison is qualified to serve as a member of the Board due to his extensive executive leadership experience, medical background and training, and extensive service on the boards of other public and private biopharmaceutical companies.

Björn Odlander, M.D., Ph.D. served as a member of the Carisma board of directors since February 2022. Dr. Odlander is a co-founder of HealthCap, a family of venture capital funds investing globally in life sciences, where he has been a Managing Partner since 1996. Dr. Odlander received a M.D. and Ph.D. from Karolinska Institute. The Company believes Dr. Odlander is qualified to serve as a member of the Board with his medical background and training, industry background and extensive experience of investments in the life-science sector.

Michael Torok currently serves as the co-founder and managing director of JEC Capital Partners, LLC, an investment company with offices in the United States and Germany, since 2008, and Manager of JEC II Associates, LLC, an investment company, since 2008. Prior to that, he served as Chief Financial Officer for Integrated Dynamics Engineering Inc, a semiconductor equipment technology company that was acquired by Aalberts Industries (AMS: AALB). Earlier in his career, Mr. Torok served in various positions for PricewaterhouseCoopers LLP, a multinational professional services network of firms. Mr. Torok currently serves on the board of directors of Liberated Syndication, Inc. (formerly NASDAQ: LSYN), a podcasting platform for creators and advertisers, since December 2022. He previously served on the board of directors of Photon Control Inc. (formerly TSX: PHO), which designs, manufactures and distributes a wide range of optical sensors and systems to measure temperature and position, from 2016 to May 2018, and Symbility Solutions Inc., a software company focused on the insurance industry, from 2015 to January 2018. Mr. Torok received a B.S. in Finance and a Master in Finance from Boston College. The Company believes that Mr. Torok is qualified to serve as a member of the Board due to his executive leadership experience and extensive service on the boards of other public and private companies.

Chidozie Ugwumba served as a member of the Carisma board of directors since December 2020. Mr. Ugwumba has served as Managing Partner of SymBiosis, a venture capital firm focused on investments in biotherapeutics, since August 2021. Prior to SymBiosis, Mr. Ugwumba served as a Managing Director and the Co-Head of the Direct and Impact Investment Group of WIT, LLC, an investment management entity affiliated with Walton Enterprises, from 2018 to 2021 and on the Private Credit and Infrastructure teams at Partners Group, a global private investment manager, from 2015 to 2018. Mr. Ugwumba currently serves on the board of directors of Clene, Inc. (Nasdaq: CLNN). Mr. Ugwumba received an M.B.A. from Cornell University and a B.A. in Political Science from Amherst College. The Company believes Mr. Ugwumba is qualified to serve as a member of the Board because of his significant experience and expertise in biopharmaceutical investments and his overall industry knowledge.

Sanford Zweifach served as a member and Chair of the Carisma board of directors since November 2021. Mr. Zweifach has served as the Founder and President of Pelican Consulting Group, a biotechnology consulting firm, since December 2019. Mr. Zweifach founded and served as Chief Executive Officer of Nuvelution Pharma, Inc., a pharmaceutical company, from June 2015 to November 2019. Mr. Zweifach currently serves on the boards of directors of Essa Pharma Inc. (Nasdaq: EPIX) and Compugen Ltd. (Nasdaq: CGEN). Mr. Zweifach received a B.A. in Biology from University of California San Diego and a M.S. in Human Physiology from University of California Davis. The Company believes Mr. Zweifach is qualified to serve as Chair of the Board because of his extensive experience in the biopharmaceutical industry and service on the boards of other public and private biopharmaceutical companies.

Executive Officers

Effective as of the effective time of the Merger, the Board appointed Steven Kelly as the Company's President and Chief Executive Officer and principal executive officer, Richard Morris as the Company's Chief Financial Officer, Chief Compliance Officer and Treasurer, principal financial officer and principal accounting officer and Michael Klichinsky, Pharm.D., Ph.D. as Chief Scientific Officer, each to serve at the discretion of the Board.

There are no family relationships among any of the Company's newly appointed principal officers. None of the Company's newly appointed principal officers has a direct or indirect material interest in any transaction required to be disclosed pursuant to Item 404(a) of Regulation S-K.

Biographical information for each of the above-named officers is set forth below.

Steven Kelly's biographical information is disclosed in the section above under the heading "Directors."

The Company has entered into an employment agreement with Mr. Kelly (the "**Kelly Employment Agreement**"), effective as of March 7, 2023, pursuant to which Mr. Kelly will serve as the Company's President and Chief Executive Officer. The employment agreement provides for Mr. Kelly's at-will employment and an annual base salary of $560,000, an annual bonus with a target amount equal to 55% of his base salary, as well as his ability to participate in the Company's employee benefit plans generally on the same basis as other similarly-situated employees. The Kelly Employment Agreement also provides that if his employment is terminated either (i) by the Company without Cause or (ii) by him with Good Reason (each as defined in the Kelly Employment Agreement), in either case within the period beginning three months before and ending twelve months after a Change in Control (as defined in the Kelly Employment Agreement) (the "**Change in Control Period**"), then Mr. Kelly will be entitled to receive, subject to his execution and nonrevocation of a release of claims in favor of the Company and compliance with all post-employment obligations under law or any restrictive covenant agreement with the Company, (a) a lump sum payment of (x) eighteen months of base salary and (y) an amount equal to 150% of his target bonus for the year of termination (or, if higher, his target bonus immediately prior to the Change in Control), (b) a lump sum payment equal to 100% of his target bonus for the year of termination (or, if higher, based on the target bonus immediately prior to the Change in Control) pro-rated based on the number of days he was employed during the calendar year in which his termination occurs, (c) COBRA health continuation for up to eighteen months and (d) 100% acceleration of all outstanding and unvested stock-based awards subject to time-based vesting. The Kelly Employment Agreement also provides that if his employment is terminated either (i) by the Company without Cause or (ii) by him with Good Reason, in either case outside the Change in Control Period, then Mr. Kelly will be entitled to receive, subject to his execution and nonrevocation of a release of claims in favor of the Company and compliance with all post-employment obligations under law or any restrictive covenant agreement with the Company, (a) twelve months of base salary payable over a period of twelve months following such termination, (b) a lump sum payment equal to 100% of his target bonus for the year of termination, pro-rated based on the number of days he was employed during the calendar year in which his termination occurs, and (c) COBRA health continuation for up to twelve months. The Kelly Employment Agreement contains a Section 280G limited cutback, in which Mr. Kelly is entitled to receive the greater of (a) the best net after-tax amount of any payments that are subject to the excise tax imposed by Section 4999 of the Internal Revenue Code of 1986, as amended (the "**Code**"), calculated in a manner consistent with Section 280G of the Code, and (b) the amount of parachute payments he would be entitled to receive if they were reduced to an amount equal to one dollar less than the amount at which Mr. Kelly becomes subject to excise tax imposed by Section 4999 of the Code.

Richard Morris, age 49, served as Carisma's Chief Financial Officer since June 2021. Prior to joining Carisma, Mr. Morris served as Chief Financial Officer of Passage Bio, Inc., a genetic medicines company, from October 2019 to May 2021 and as Executive Vice President and Chief Financial Officer of Context Therapeutics, LLC, a biopharmaceutical company, or Context, from November 2017 to July 2019. Prior to Context, Mr. Morris served as Chief Financial Officer of Vitae Pharmaceuticals Incorporated, a biopharmaceutical company, from 2014 to October 2016, and held several senior financial roles over 12 years at ViroPharma Incorporated, a biopharmaceutical company, including Chief Accounting Officer and Vice President, Financial and Strategic Planning. Mr. Morris received a B.S. in Accounting from Saint Joseph's University and has been a CPA since 1999.

The Company entered into an employment agreement with Mr. Morris (the "**Morris Employment Agreement**"), effective as of March 7, 2023, pursuant to which Mr. Morris will serve as the Company's Chief Financial Officer. The employment agreement provides for Mr. Morris' at-will employment and an annual base salary of $467,000, an annual bonus with a target amount equal to 40% of his base salary, as well as his ability to participate in the Company's employee benefit plans generally on the same basis as other similarly-situated employees. The Morris Employment Agreement also provides that if his employment is terminated either (i) by the Company without Cause or (ii) by him with Good Reason (each as defined in the Morris Employment Agreement), in either case within Change in Control Period, then Mr. Morris will be entitled to receive, subject to his execution and nonrevocation of a release of claims in favor of the Company and compliance with all post-employment obligations under law or any restrictive covenant agreement with the Company, (a) a lump sum payment of (x) twelve months of base salary and (y) an amount equal to 100% of his target bonus for the year of termination (or, if higher, his target bonus immediately prior to the Change in Control), (b) a lump sum payment equal to 100% of his target bonus for the year of termination (or, if higher, based on the target bonus immediately prior to the Change in Control) pro-rated based on the number of days he was employed during the calendar year in which his termination occurs, (c) COBRA health continuation for up to twelve months and (d) 100% acceleration of all outstanding and unvested stock-based awards subject to time-based vesting. The Morris Employment Agreement also provides that if his employment is terminated either (i) by the Company without Cause or (ii) by him with Good Reason, in either case outside the Change in Control Period, then Mr. Morris will be entitled to receive, subject to his execution and nonrevocation of a release of claims in favor of the Company and compliance with all post-employment obligations under law or any restrictive covenant agreement with the Company, (a) twelve months of base salary payable over a period of twelve months following such termination, (b) a lump sum payment equal to 100% of his target bonus for the year of termination, pro-rated based on the number of days he was employed during the calendar year in which his termination occurs, and (c) COBRA health continuation for up to twelve months. The Morris Employment Agreement contains a Section 280G limited cutback, in which Mr. Morris is entitled to receive the greater of (a) the best net after-tax amount of any payments that are subject to the excise tax imposed by Section 4999 of the Code, calculated in a manner consistent with Section 280G of the Code, and (b) the amount of parachute payments he would be entitled to receive if they were reduced to an amount equal to one dollar less than the amount at which Mr. Morris becomes subject to excise tax imposed by Section 4999 of the Code.

Michael Klichinsky, Pharm.D., Ph.D., age 33, served as Carisma's Chief Scientific Officer since April 2022. He co-founded Carisma in 2016 and served as Vice President of Discovery of Carisma from October 2018 to April 2021 and as Senior Vice President of Research of Carisma from April 2021 to April 2022. Dr. Klichinsky received a Doctor of Pharmacy from the University of Sciences in Philadelphia and a Ph.D. in Pharmacology from the University of Pennsylvania.

The Company entered into an employment agreement with Mr. Klichinsky (the "**Klichinsky Employment Agreement**"), effective as of March 7, 2023, pursuant to which Mr. Klichinsky will serve as the Company's Chief Scientific Officer. The employment agreement provides for Mr. Klichinsky's at-will employment and an annual base salary of $420,000, an annual bonus with a target amount equal to 40% of his base salary, as well as his ability to participate in the Company's employee benefit plans generally on the same basis as other similarly-situated employees. The Klichinsky Employment Agreement also provides that if his employment is terminated either (i) by the Company without Cause or (ii) by him with Good Reason (each as defined in the Klichinsky Employment Agreement), in either case within the Change in Control Period, then Mr. Klichinsky will be entitled to receive, subject to his execution and nonrevocation of a release of claims in favor of the Company and compliance with all post-employment obligations under law or any restrictive covenant agreement with the Company, (a) a lump sum payment of (x) twelve months of base salary and (y) an amount equal to 100% of his target bonus for the year of termination (or, if higher, his target bonus immediately prior to the Change in Control), (b) a lump sum payment equal to 100% of his target bonus for the year of termination (or, if higher, based on the target bonus immediately prior to the Change in Control) pro-rated based on the number of days he was employed during the calendar year in which his termination occurs, (c) COBRA health continuation for up to twelve months and (d) 100% acceleration of all outstanding and unvested stock-based awards subject to time-based vesting. The Klichinsky Employment Agreement also provides that if his employment is terminated either (i) by the Company without Cause or (ii) by him with Good Reason, in either case outside the Change in Control Period, then Mr. Klichinsky will be entitled to receive, subject to his execution and nonrevocation of a release of claims in favor of the Company and compliance with all post-employment obligations under law or any restrictive covenant agreement with the Company, (a) twelve months of base salary payable over a period of twelve months following such termination, (b) a lump sum payment equal to 100% of his target bonus for the year of termination, pro-rated based on the number of days he was employed during the calendar year in which his termination occurs, and (c) COBRA health continuation for up to twelve months. The Klichinsky Employment Agreement contains a Section 280G limited cutback, in which Mr. Klichinsky is entitled to receive the greater of (a) the best net after-tax amount of any payments that are subject to the excise tax imposed by Section 4999 of the Code, calculated in a manner consistent with Section 280G of the Code, and (b) the amount of parachute payments he would be entitled to receive if they were reduced to an amount equal to one dollar less than the amount at which Mr. Klichinsky becomes subject to excise tax imposed by Section 4999 of the Code.

The foregoing descriptions of the Kelly Employment Agreement, Morris Employment Agreement and Klichinsky Employment Agreement do not purport to be complete and are qualified in their entirety by the full text of the Kelly Employment Agreement, Morris Employment Agreement and Klichinsky Employment Agreement, which are filed herewith as Exhibits 10.7, 10.8 and 10.9, respectively, and incorporated herein by reference.

Compensatory Plans

At the effective time of the Merger and in accordance with the Merger Agreement, the Company assumed the Carisma 2017 Plan and each Carisma option outstanding thereunder in accordance with the terms of the Carisma 2017 Plan and the terms of the nonstatutory stock option agreement or incentive stock option agreement by which such Carisma option is evidenced (the "**2017 Plan Award Agreements**").

Effective immediately after the effective time of the Merger, the Company (i) amended and restated the Sesen Bio, Inc. Amended and Restated 2014 Stock Incentive Plan to change the name of the plan to the "Carisma Therapeutics Inc. 2014 Amended and Restated Stock Incentive Plan" and to reflect the effect of the Reverse Stock Split (the "**A&R 2014 Plan**"), (ii) adopted a new form of Stock Option Agreement and a new form of Restricted Stock Unit Agreement for the grant of options and restricted stock units under the A&R 2014 Plan from and after the effective time of the Merger (together, the "**2014 Plan Award Agreements**"), and (iii) amended and restated the Sesen Bio, Inc. 2014 Employee Stock Purchase Plan, as amended, to change the name of the plan to the "Carisma Therapeutics Inc. 2014 Employee Stock Purchase Plan" and to restate and integrate all prior amendments thereto (as amended, the "**ESPP**").

The foregoing descriptions of the Carisma 2017 Plan, the forms of 2017 Plan Award Agreements, the A&R 2014 Plan, the forms of 2014 Plan Award Agreements and the ESPP do not purport to be complete and are qualified in their entirety by the full text of the Carisma 2017 Plan, the forms of 2017 Plan Award Agreements, the A&R 2014 Plan, the forms of 2014 Plan Award Agreements and the ESPP, which are filed herewith as Exhibits 10.10, 10.11, 10.12, 10.13, 10.14, 10.15 and 10.16, respectively, and incorporated herein by reference.

Departure of Officers

On March 7, 2023, effective as of the effective time of the Merger, Thomas R. Cannell, D.V.M., the Company's President and Chief Executive Officer Monica Forbes, the Company's Chief Financial Officer and Treasurer, and Mark Sullivan, the Company's General Counsel, Chief Compliance Officer and Corporate Secretary, resigned as officers of the Company.

In connection with their termination of employment, Dr. Cannell, Ms. Forbes and Mr. Sullivan are entitled to certain severance payments and benefits, in each case, as described in their respective employment agreements. For additional information regarding these payments and benefits, please refer to the Company's proxy statement/prospectus dated January 19, 2023, as supplemented on February 16, 2023, which is incorporated by reference in all respects.

In accordance with the Merger Agreement, prior to the effective time of the Merger, the Board adopted appropriate resolutions and took all other actions necessary and appropriate to (i) provide that each outstanding restricted stock unit and option, to the extent unvested, was accelerated in full and (ii) provide that the outstanding non-qualified stock options (the "**NQSOs**") held by the directors and officers, including Dr. Cannell, Ms. Forbes and Mr. Sullivan, were amended to extend the post-termination exercise period of each such NQSO to up to 210 days following such individual's termination of employment or other service relationship with the Company.

Item 5.03. Amendments to Articles of Incorporation or Bylaws; Change in Fiscal Year.

Restated Certificate of Incorporation

To the extent required by Item 5.03 of Form 8-K, the information contained in Item 2.01 and Item 3.03 of this Current Report on Form 8-K is incorporated herein by reference.

By-Laws

Effective as of immediately after the effective time of the Merger, the Company amended and restated its Amended and Restated By-Laws (the "**Amended and Restated By-Laws**"). The Amended and Restated By-Laws, among other things, (i) amend references to the Company's name, (ii) reflect certain updates to the Delaware General Corporation Law, (iii) clarify and enhance the procedural mechanics and disclosure requirements of the Company's advance notice procedures for stockholder-requested special meetings, stockholder proposals and stockholder-nominated director candidates, and (iv) make conforming changes and other clarifying updates.

The foregoing descriptions of the Restated Certificate of Incorporation and the Amended and Restated By-Laws do not purport to be complete and are qualified in their entirety by reference to the full text of the Restated Certificate of Incorporation and the Amended and Restated By-Laws, copies of which are filed herewith as Exhibits 3.1 and 3.2, respectively, and incorporated herein by reference.

Item 5.05. Amendments to the Registrant's Code of Ethics, or Waiver of a Provision of the Code of Ethics.

In connection with the Merger, the Board adopted a new code of business conduct and ethics (the "**Code of Conduct**") effective as of the effective time of the Merger. The Code of Conduct superseded the Company's existing code of business conduct and ethics previously adopted by the Board. The Code of Conduct applies to all directors, officers and employees of the Company.

The existing code was refreshed and updated in connection with the Merger to conform the Code of Conduct to reflect current best practices and enhance the Company personnel's understanding of the Company's standards of ethical business practices, promote awareness of ethical issues that may be encountered in carrying out an employee's or director's responsibilities, and improve its clarity as to how to address ethical issues that may arise.

The newly adopted Code of Conduct did not result in any explicit or implicit waiver of any provision of the Company's code of business conduct and ethics in effect prior to the adoption of the Code of Conduct. The foregoing description of the Code of Conduct does not purport to be complete and is qualified in its entirety by reference to the full text of the Code of Conduct, a copy of which is filed herewith as Exhibit 14.1 and incorporated herein by reference.

The Code of Conduct will also be posted on the Company's website at www.carismatx.com. The Company also anticipates filing any future amendment or waiver of the Code of Conduct on the Company's website within four business days of the date thereof. The contents of the Company's website are not incorporated by reference in this Current Report on Form 8-K or made a part hereof for any purpose.

Item 7.01. Regulation FD Disclosure.

On March 7, 2023, the Company issued a press release announcing the closing of the Merger. A copy of the press release is furnished herewith as Exhibit 99.1 hereto and incorporated herein by reference.

The information in this Item 7.01 of this Form 8-K (including Exhibit 99.1) shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act or the Exchange Act, except as expressly set forth by specific reference in such a filing. The furnishing of this information hereby shall not be deemed an admission as to the materiality of any such information.

Item 8.01. Other Events.

The Company's Business Section and the Company's Risk Factors Section are filed herewith as Exhibits 99.2 and 99.3, respectively, and incorporated herein by reference.

Forward-Looking Statements

This Current Report on Form 8-K and the exhibits attached hereto contain forward-looking statements within the meaning of the Private Securities Litigation Reform of 1995 that involve substantial risks and uncertainties. All statements, other than statements of historical fact, contained in this Current Report on Form 8-K and the exhibits attached hereto, including statements regarding the Company's strategy, future operations, future financial position, future revenues, projected costs, prospectus, plans, objectives of management and expected market growth, are forward-looking statements. The words "anticipate," "believe," "contemplate," "continue," "could," "estimate," "expect," "goals," "intend," "may," "might," "outlook," "plan," "project," "potential," "predict," "target," "possible," "will," "would," "could," "should," and the negative version of these words and other similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. For example, statements concerning the Company's business, strategy, future operations, cash runway, the advancement of the Company's product candidates and product pipeline, and the clinical development of the Company's product candidates, including expectations regarding timing of initiation and results of clinical trials are forward-looking statements. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including, without limitation: (i) risks associated with the possible failure to realize certain anticipated benefits of the Merger, including with respect to future financial and operating results; (ii) the effect of the completion of the Merger on the Company's business relationships, operating results and business generally; (iii) the outcome of any litigation related to the Merger Agreement or the transactions contemplated thereby; (iv) competitive responses to the Merger and changes in expected or existing competition; (v) the ability of the Company to obtain, maintain and protect its intellectual property rights related to its product candidates; (vi) the Company's ability to advance the development of its product candidates under the timelines it anticipates in planned and future clinical trials; (vii) the Company's ability to replicate in later clinical trials positive results found in preclinical studies and early-stage clinical trials of its product candidates; (viii) the Company's ability to realize the anticipated benefits of its research and development programs, strategic partnerships, research and licensing programs and academic and other collaborations; (ix) regulatory requirements or developments and the Company's ability to obtain and maintain necessary approvals from the U.S. Food and Drug Administration and other regulatory authorities; (x) changes to clinical trial designs and regulatory pathways; (xi) risks associated with the Company's ability to manage expenses; (xii) changes in capital resource requirements; (xiii) risks related to the inability of the Company to obtain sufficient additional capital to continue to advance its product candidates and its preclinical programs; and (xiv) legislative, regulatory, political and economic developments.

The Company may not actually achieve the plans, intentions or expectations disclosed in the Company's forward-looking statements, and you should not place undue reliance on the Company's forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements the Company makes. The Company has included important factors in the cautionary statements included in the Risk Factors Section filed as Exhibit 99.3 to this Current Report on Form 8-K, that the Company believes could cause actual results or events to differ materially from the forward-looking statements that made in this Current Report on Form 8-K and the exhibits attached hereto. Such forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, collaborations, joint ventures or investments the Company may make or enter into. You should read this Current Report on Form 8-K and the documents filed as exhibits hereto completely and with the understanding that the Company's actual future results may be materially different from what the Company expects. The forward-looking statements contained in this Current Report on Form 8-K are made as of the date of this report, and the Company does not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law.

Item 9.01. Financial Statements and Exhibits.

(a) Financial Statements of Businesses Acquired.

Unaudited historical financial information for Carisma as of and for the nine months ended September 30, 2022 and September 30, 2021, and audited historical information for Carisma as of and for the twelve months ended December 31, 2021 and December 31, 2020 are included in the Registration Statement, which was declared effective by the SEC on January 19, 2023.

The Company intends to file the financial statements of Carisma required by Item 9.01(a) as part of an amendment to this Current Report on Form 8-K not later than 71 calendar days after the date this Current Report on Form 8-K is required to be filed.

(b) Pro Forma Financial Information.

The Company intends to file the pro forma financial information required by Item 9.01(b) as part of an amendment to this Current Report on Form 8-K not later than 71 calendar days after the date this Current Report on Form 8-K is required to be filed.

(d) Exhibits

Exhibit Number	Description
3.1	Restated Certificate of Incorporation of Carisma Therapeutics Inc., dated March 7, 2023.
3.2	Amended and Restated By-Laws of Carisma Therapeutics Inc., dated March 7, 2023.
10.1*	Collaboration and License Agreement, dated January 7, 2022, by and between Carisma and ModernaTX, Inc. (incorporated by reference to Exhibit 10.32 to the Registrant's Registration Statement on Form S-4/A (File No. 333-267891), filed on January 18, 2023).
10.2*	License Agreement, dated as of November 10, 2017, by and between Carisma and the Trustees of the University of Pennsylvania, as amended (incorporated by reference to Exhibit 10.33 to the Registrant's Registration Statement on Form S-4 (File No. 333-267891), filed on October 14, 2022).
10.3*	License Agreement, dated as of July 24, 2020, by and between Carisma and New York University (incorporated by reference to Exhibit 10.34 to the Registrant's Registration Statement on Form S-4 (File No. 333-267891), filed on October 14, 2022).
10.4	Registration Rights Agreement, dated March 7, 2023.
10.5	Contingent Value Rights Agreement, dated March 7, 2023.
10.6	Form of Indemnification Agreement for Directors and Officers of Carisma Therapeutics Inc.
10.7	Employment Agreement, dated March 7, 2023, by and between Carisma Therapeutics Inc. and Steven Kelly.
10.8	Employment Agreement, dated March 7, 2023, by and between Carisma Therapeutics Inc. and Richard Morris.
10.9	Employment Agreement, dated March 7, 2023, by and between Carisma Therapeutics Inc. and Michael Klichinsky.
10.10	CARISMA Therapeutics Inc. 2017 Stock Incentive Plan.
10.11	Form of Nonstatutory Stock Option Agreement under the CARISMA Therapeutics Inc. 2017 Stock Incentive Plan.
10.12	Form of Incentive Stock Option Agreement under the CARISMA Therapeutics Inc. 2017 Stock Incentive Plan.
10.13	Carisma Therapeutics Inc. Amended and Restated 2014 Stock Incentive Plan.
10.14	Form of Stock Option Agreement under the Carisma Therapeutics Inc. 2014 Amended and Restated Stock Incentive Plan.
10.15	Form of Restricted Stock Unit Agreement under the Carisma Therapeutics Inc. 2014 Amended and Restated Stock Incentive Plan.
10.16	Carisma Therapeutics Inc. 2014 Employee Stock Purchase Plan.
14.1	Code of Business Conduct and Ethics of Carisma Therapeutics Inc.
16.1	Letter from Ernst & Young LLP, dated March 7, 2023.
99.1	Press Release issued on March 7, 2023.
99.2	Business Section of Carisma Therapeutics Inc.
99.3	Risk Factors of Carisma Therapeutics Inc.
104	Cover Page Interactive Data File (embedded within the Inline XBRL document).

* Portions of this exhibit have been omitted pursuant to Item 601(b)(10)(iv) of Regulation S-K.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

CARISMA THERAPEUTICS INC.

By /s/ Steven Kelly
Steven Kelly
President and Chief Executive Officer

Date: March 7, 2023

Exhibit 3.1

RESTATED CERTIFICATE OF INCORPORATION

OF

SESEN BIO, INC.

(to be renamed Carisma Therapeutics Inc.)

(originally incorporated on February 25, 2008)

Sesen Bio, Inc. (the "Corporation"), a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the "General Corporation Law"), does hereby certify as follows:

A. The current name of the Corporation is Sesen Bio, Inc. The original Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on February 25, 2008 under the name Newco LS14, Inc. The Certificate of Incorporation was mostly recently amended and restated on February 11, 2014 (as further amended, including most recently on March 7, 2023, the "Prior Certificate of Incorporation").

B. This Restated Certificate of Incorporation has been duly adopted by the Board of Directors of the Corporation pursuant to Sections 242 and 245 of the General Corporation Law of the State of Delaware to change the name of the Corporation to Carisma Therapeutics Inc. and to restate and integrate all amendments to the Prior Certificate of Incorporation and does not further amend (except as permitted under Sections 242(a)(1), 242(a)(7) and 242(b)(1) of the General Corporation Law of the State of Delaware) the provisions of the Prior Certificate of Incorporation as theretofore amended.

C. This Restated Certificate of Incorporation shall become effective as of 5:03 p.m. Eastern Standard Time on March 7, 2023 (the "Effective Time").

Accordingly, as of the Effective Time, the Prior Certificate of Incorporation of the Corporation, as theretofore amended, is hereby amended, integrated and restated in its entirety to read as follows:

FIRST: The name of the Corporation is Carisma Therapeutics Inc.

SECOND: The address of the Corporation's registered office in the State of Delaware is Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle, 19801. The name of its registered agent at that address is The Corporation Trust Company.

THIRD: The nature of the business or purposes to be conducted or promoted by the Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware.

FOURTH: The total number of shares of all classes of stock which the Corporation shall have authority to issue is 105,000,000 shares, consisting of (i) 100,000,000 shares of Common Stock, $0.001 par value per share ("Common Stock"), and (ii) 5,000,000 shares of Preferred Stock, $0.001 par value per share ("Preferred Stock").

The following is a statement of the designations and the powers, privileges and rights, and the qualifications, limitations or restrictions thereof in respect of each class of capital stock of the Corporation.

A. COMMON STOCK.

1. General. The voting, dividend and liquidation rights of the holders of the Common Stock are subject to and qualified by the rights of the holders of the Preferred Stock of any series as may be designated by the Board of Directors upon any issuance of the Preferred Stock of any series.

2. Voting. The holders of the Common Stock shall have voting rights at all meetings of stockholders, each such holder being entitled to one vote for each share thereof held by such holder; provided, however, that, except as otherwise required by law, holders of Common Stock shall not be entitled to vote on any amendment to this Certificate of Incorporation (which, as used herein, shall mean the certificate of incorporation of the Corporation, as amended from time to time, including the terms of any certificate of designations of any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together as a class with the holders of one or more other such series, to vote thereon pursuant to this Certificate of Incorporation. There shall be no cumulative voting.

The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law of the State of Delaware.

3. Dividends. Dividends may be declared and paid on the Common Stock from funds lawfully available therefor as and when determined by the Board of Directors and subject to any preferential dividend or other rights of any then outstanding Preferred Stock.

4. Liquidation. Upon the dissolution or liquidation of the Corporation, whether voluntary or involuntary, holders of Common Stock will be entitled to receive all assets of the Corporation available for distribution to its stockholders, subject to any preferential or other rights of any then outstanding Preferred Stock.

B. PREFERRED STOCK.

Preferred Stock may be issued from time to time in one or more series, each of such series to have such terms as stated or expressed herein and in the resolution or resolutions providing for the issue of such series adopted by the Board of Directors of the Corporation as hereinafter provided. Any shares of Preferred Stock which may be redeemed, purchased or acquired by the Corporation may be reissued except as otherwise provided by law.

Authority is hereby expressly granted to the Board of Directors from time to time to issue the Preferred Stock in one or more series, and in connection with the creation of any such series, by adopting a resolution or resolutions providing for the issuance of the shares thereof and by filing a certificate of designations relating thereto in accordance with the General Corporation Law of the State of Delaware, to determine and fix the number of shares of such series and such voting powers, full or limited, or no voting powers, and such designations, preferences and relative participating, optional or other special rights, and qualifications, limitations or restrictions thereof, including without limitation thereof, dividend rights, conversion rights, redemption privileges and liquidation preferences, as shall be stated and expressed in such resolutions, all to the full extent now or hereafter permitted by the General Corporation Law of the State of Delaware. Without limiting the generality of the foregoing, the resolutions providing for issuance of any series of Preferred Stock may provide that such series shall be superior or rank equally or be junior to any other series of Preferred Stock to the extent permitted by law.

The number of authorized shares of Preferred Stock may be increased or decreased (but not below the number of shares then outstanding) by the affirmative vote of the holders of a majority of the voting power of the capital stock of the Corporation entitled to vote thereon, voting as a single class, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law of the State of Delaware.

FIFTH: Except as otherwise provided herein, the Corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute and this Certificate of Incorporation, and all rights conferred upon stockholders herein are granted subject to this reservation.

SIXTH: In furtherance and not in limitation of the powers conferred upon it by the General Corporation Law of the State of Delaware, and subject to the terms of any series of Preferred Stock, the Board of Directors shall have the power to adopt, amend, alter or repeal the By-laws of the Corporation by the affirmative vote of a majority of the directors present at any regular or special meeting of the Board of Directors at which a quorum is present. The stockholders may not adopt, amend, alter or repeal the By-laws of the Corporation, or adopt any provision inconsistent therewith, unless such action is approved, in addition to any other vote required by this Certificate of Incorporation, by the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in any annual election of directors or class of directors. Notwithstanding any other provisions of law, this Certificate of Incorporation or the By-laws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the votes which all the stockholders would be entitled to cast in any annual election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article SIXTH.

SEVENTH: Except to the extent that the General Corporation Law of the State of Delaware prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty, no director of the Corporation shall be personally liable to the Corporation or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability. No amendment to or repeal of this provision shall apply to or have any effect on the liability or alleged liability of any director of the Corporation for or with respect to any acts or omissions of such director occurring prior to such amendment or repeal. If the General Corporation Law of the State of Delaware is amended to permit further elimination or limitation of the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the General Corporation Law of the State of Delaware as so amended.

EIGHTH: The Corporation shall provide indemnification as follows:

1. Actions, Suits and Proceedings Other than by or in the Right of the Corporation. The Corporation shall indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the Corporation) by reason of the fact that he or she is or was, or has agreed to become, a director or officer of the Corporation, or is or was serving, or has agreed to serve, at the request of the Corporation, as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan) (all such persons being referred to hereafter as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), liabilities, losses, judgments, fines (including excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974), and amounts paid in settlement actually and reasonably incurred by or on behalf of Indemnitee in connection with such action, suit or proceeding and any appeal therefrom, if Indemnitee acted in good faith and in a manner which Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that Indemnitee did not act in good faith and in a manner which Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that his or her conduct was unlawful.

2. Actions or Suits by or in the Right of the Corporation. The Corporation shall indemnify any Indemnitee who was or is a party to or threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the Corporation to procure a judgment in its favor by reason of the fact that Indemnitee is or was, or has agreed to become, a director or officer of the Corporation, or is or was serving, or has agreed to serve, at the request of the Corporation, as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred by or on behalf of Indemnitee in connection with such action, suit or proceeding and any appeal therefrom, if Indemnitee acted in good faith and in a manner which Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, except that no indemnification shall be made under this Section 2 in respect of any claim, issue or matter as to which Indemnitee shall have been adjudged to be liable to the Corporation, unless, and only to the extent, that the Court of Chancery of Delaware or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of such liability but in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnity for such expenses (including attorneys' fees) which the Court of Chancery of Delaware or such other court shall deem proper.

3. Indemnification for Expenses of Successful Party. Notwithstanding any other provisions of this Article EIGHTH, to the extent that an Indemnitee has been successful, on the merits or otherwise, in defense of any action, suit or proceeding referred to in Sections 1 and 2 of this Article EIGHTH, or in defense of any claim, issue or matter therein, or on appeal from any such action, suit or proceeding, Indemnitee shall be indemnified against all expenses (including attorneys' fees) actually and reasonably incurred by or on behalf of Indemnitee in connection therewith. Without limiting the foregoing, if any action, suit or proceeding is disposed of, on the merits or otherwise (including a disposition without prejudice), without (i) the disposition being adverse to Indemnitee, (ii) an adjudication that Indemnitee was liable to the Corporation, (iii) a plea of guilty or nolo contendere by Indemnitee, (iv) an adjudication that Indemnitee did not act in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Corporation, and (v) with respect to any criminal proceeding, an adjudication that Indemnitee had reasonable cause to believe his or her conduct was unlawful, Indemnitee shall be considered for the purposes hereof to have been wholly successful with respect thereto.

4. Notification and Defense of Claim. As a condition precedent to an Indemnitee's right to be indemnified, such Indemnitee must notify the Corporation in writing as soon as practicable of any action, suit, proceeding or investigation involving such Indemnitee for which indemnity will or could be sought. With respect to any action, suit, proceeding or investigation of which the Corporation is so notified, the Corporation will be entitled to participate therein at its own expense and/or to assume the defense thereof at its own expense, with legal counsel reasonably acceptable to Indemnitee. After notice from the Corporation to Indemnitee of its election so to assume such defense, the Corporation shall not be liable to Indemnitee for any legal or other expenses subsequently incurred by Indemnitee in connection with such action, suit, proceeding or investigation, other than as provided below in this Section 4. Indemnitee shall have the right to employ his or her own counsel in connection with such action, suit, proceeding or investigation, but the fees and expenses of such counsel incurred after notice from the Corporation of its assumption of the defense thereof shall be at the expense of Indemnitee unless (i) the employment of counsel by Indemnitee has been authorized by the Corporation, (ii) counsel to Indemnitee shall have reasonably concluded that there may be a conflict of interest or position on any significant issue between the Corporation and Indemnitee in the conduct of the defense of such action, suit, proceeding or investigation or (iii) the Corporation shall not in fact have employed counsel to assume the defense of such action, suit, proceeding or investigation, in each of which cases the fees and expenses of counsel for Indemnitee shall be at the expense of the Corporation, except as otherwise expressly provided by this Article EIGHTH. The Corporation shall not be entitled, without the consent of Indemnitee, to assume the defense of any claim brought by or in the right of the Corporation or as to which counsel for Indemnitee shall have reasonably made the conclusion provided for in clause (ii) above. The Corporation shall not be required to indemnify Indemnitee under this Article EIGHTH for any amounts paid in settlement of any action, suit, proceeding or investigation effected without its written consent. The Corporation shall not settle any action, suit, proceeding or investigation in any manner which would impose any penalty or limitation on Indemnitee without Indemnitee's written consent. Neither the Corporation nor Indemnitee will unreasonably withhold or delay its consent to any proposed settlement.

5. Advancement of Expenses. Subject to the provisions of Section 6 of this Article EIGHTH, in the event of any threatened or pending action, suit, proceeding or investigation of which the Corporation receives notice under this Article EIGHTH, any expenses (including attorneys' fees) incurred by or on behalf of Indemnitee in defending an action, suit, proceeding or investigation or any appeal therefrom shall be paid by the Corporation in advance of the final disposition of such matter; provided, however, that the payment of such expenses incurred by or on behalf of Indemnitee in advance of the final disposition of such matter shall be made only upon receipt of an undertaking by or on behalf of Indemnitee to repay all amounts so advanced in the event that it shall ultimately be determined by final judicial decision from which there is no further right to appeal that Indemnitee is not entitled to be indemnified by the Corporation as authorized in this Article EIGHTH; and provided further that no such advancement of expenses shall be made under this Article EIGHTH if it is determined (in the manner described in Section 6) that (i) Indemnitee did not act in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interests of the Corporation, or (ii) with respect to any criminal action or proceeding, Indemnitee had reasonable cause to believe his or her conduct was unlawful. Such undertaking shall be accepted without reference to the financial ability of Indemnitee to make such repayment.

6. Procedure for Indemnification and Advancement of Expenses. In order to obtain indemnification or advancement of expenses pursuant to Section 1, 2, 3 or 5 of this Article EIGHTH, an Indemnitee shall submit to the Corporation a written request. Any such advancement of expenses shall be made promptly, and in any event within 60 days after receipt by the Corporation of the written request of Indemnitee, unless (i) the Corporation has assumed the defense pursuant to Section 4 of this Article EIGHTH (and none of the circumstances described in Section 4 of this Article EIGHTH that would nonetheless entitle the Indemnitee to indemnification for the fees and expenses of separate counsel have occurred) or (ii) the Corporation determines within such 60-day period that Indemnitee did not meet the applicable standard of conduct set forth in Section 1, 2 or 5 of this Article EIGHTH, as the case may be. Any such indemnification, unless ordered by a court, shall be made with respect to requests under Section 1 or 2 only as authorized in the specific case upon a determination by the Corporation that the indemnification of Indemnitee is proper because Indemnitee has met the applicable standard of conduct set forth in Section 1 or 2, as the case may be. Such determination shall be made in each instance (a) by a majority vote of the directors of the Corporation consisting of persons who are not at that time parties to the action, suit or proceeding in question ("disinterested directors"), whether or not a quorum, (b) by a committee of disinterested directors designated by majority vote of disinterested directors, whether or not a quorum, (c) if there are no disinterested directors, or if the disinterested directors so direct, by independent legal counsel (who may, to the extent permitted by law, be regular legal counsel to the Corporation) in a written opinion, or (d) by the stockholders of the Corporation.

7. Remedies. The right to indemnification or advancement of expenses as granted by this Article EIGHTH shall be enforceable by Indemnitee in any court of competent jurisdiction. Neither the failure of the Corporation to have made a determination prior to the commencement of such action that indemnification is proper in the circumstances because Indemnitee has met the applicable standard of conduct, nor an actual determination by the Corporation pursuant to Section 6 of this Article EIGHTH that Indemnitee has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that Indemnitee has not met the applicable standard of conduct. In any suit brought by Indemnitee to enforce a right to indemnification, or brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the Corporation shall have the burden of proving that Indemnitee is not entitled to be indemnified, or to such advancement of expenses, under this Article EIGHTH. Indemnitee's expenses (including attorneys' fees) reasonably incurred in connection with successfully establishing Indemnitee's right to indemnification, in whole or in part, in any such proceeding shall also be indemnified by the Corporation. Notwithstanding the foregoing, in any suit brought by Indemnitee to enforce a right to indemnification hereunder it shall be a defense that the Indemnitee has not met any applicable standard for indemnification set forth in the General Corporation Law of the State of Delaware.

8. Limitations. Notwithstanding anything to the contrary in this Article EIGHTH, except as set forth in Section 7 of this Article EIGHTH, the Corporation shall not indemnify an Indemnitee pursuant to this Article EIGHTH in connection with a proceeding (or part thereof) initiated by such Indemnitee unless the initiation thereof was approved by the Board of Directors of the Corporation. Notwithstanding anything to the contrary in this Article EIGHTH, the Corporation shall not indemnify an Indemnitee to the extent such Indemnitee is reimbursed from the proceeds of insurance, and in the event the Corporation makes any indemnification payments to an Indemnitee and such Indemnitee is subsequently reimbursed from the proceeds of insurance, such Indemnitee shall promptly refund indemnification payments to the Corporation to the extent of such insurance reimbursement.

9. Subsequent Amendment. No amendment, termination or repeal of this Article EIGHTH or of the relevant provisions of the General Corporation Law of the State of Delaware or any other applicable laws shall adversely affect or diminish in any way the rights of any Indemnitee to indemnification under the provisions hereof with respect to any action, suit, proceeding or investigation arising out of or relating to any actions, transactions or facts occurring prior to the final adoption of such amendment, termination or repeal.

10. Other Rights. The indemnification and advancement of expenses provided by this Article EIGHTH shall not be deemed exclusive of any other rights to which an Indemnitee seeking indemnification or advancement of expenses may be entitled under any law (common or statutory), agreement or vote of stockholders or disinterested directors or otherwise, both as to action in Indemnitee's official capacity and as to action in any other capacity while holding office for the Corporation, and shall continue as to an Indemnitee who has ceased to be a director or officer, and shall inure to the benefit of the estate, heirs, executors and administrators of Indemnitee. Nothing contained in this Article EIGHTH shall be deemed to prohibit, and the Corporation is specifically authorized to enter into, agreements with officers and directors providing indemnification rights and procedures different from those set forth in this Article EIGHTH. In addition, the Corporation may, to the extent authorized from time to time by its Board of Directors, grant indemnification rights to other employees or agents of the Corporation or other persons serving the Corporation and such rights may be equivalent to, or greater or less than, those set forth in this Article EIGHTH.

11. Partial Indemnification. If an Indemnitee is entitled under any provision of this Article EIGHTH to indemnification by the Corporation for some or a portion of the expenses (including attorneys' fees), liabilities, losses, judgments, fines (including excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974) or amounts paid in settlement actually and reasonably incurred by or on behalf of Indemnitee in connection with any action, suit, proceeding or investigation and any appeal therefrom but not, however, for the total amount thereof, the Corporation shall nevertheless indemnify Indemnitee for the portion of such expenses (including attorneys' fees), liabilities, losses, judgments, fines (including excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974) or amounts paid in settlement to which Indemnitee is entitled.

12. Insurance. The Corporation may purchase and maintain insurance, at its expense, to protect itself and any director, officer, employee or agent of the Corporation or another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan) against any expense, liability or loss incurred by him or her in any such capacity, or arising out of his or her status as such, whether or not the Corporation would have the power to indemnify such person against such expense, liability or loss under the General Corporation Law of the State of Delaware.

13. Savings Clause. If this Article EIGHTH or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the Corporation shall nevertheless indemnify each Indemnitee as to any expenses (including attorneys' fees), liabilities, losses, judgments, fines (including excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974) and amounts paid in settlement in connection with any action, suit, proceeding or investigation, whether civil, criminal or administrative, including an action by or in the right of the Corporation, to the fullest extent permitted by any applicable portion of this Article EIGHTH that shall not have been invalidated and to the fullest extent permitted by applicable law.

14. Definitions. Terms used herein and defined in Section 145(h) and Section 145(i) of the General Corporation Law of the State of Delaware shall have the respective meanings assigned to such terms in such Section 145(h) and Section 145(i).

NINTH: This Article NINTH is inserted for the management of the business and for the conduct of the affairs of the Corporation.

1. General Powers. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors.

2. Number of Directors; Election of Directors. Subject to the rights of holders of any series of Preferred Stock to elect directors, the number of directors of the Corporation shall be established by the Board of Directors. Election of directors need not be by written ballot, except as and to the extent provided in the By-laws of the Corporation.

3. Classes of Directors. Subject to the rights of holders of any series of Preferred Stock to elect directors, the Board of Directors shall be and is divided into three classes, designated Class I, Class II and Class III. Each class shall consist, as nearly as may be possible, of one-third of the total number of directors constituting the entire Board of Directors. The Board of Directors is authorized to assign members of the Board of Directors already in office to Class I, Class II or Class III at the time such classification becomes effective.

4. Terms of Office. Subject to the rights of holders of any series of Preferred Stock to elect directors, each director shall serve for a term ending on the date of the third annual meeting of stockholders following the annual meeting of stockholders at which such director was elected; provided that the term of each director shall continue until the election and qualification of his or her successor and be subject to his or her earlier death, resignation or removal.

5. Quorum. The greater of (a) a majority of the directors at any time in office and (b) one-third of the number of directors fixed pursuant to Section 2 of this Article NINTH shall constitute a quorum of the Board of Directors. If at any meeting of the Board of Directors there shall be less than such a quorum, a majority of the directors present may adjourn the meeting from time to time without further notice other than announcement at the meeting, until a quorum shall be present.

6. Action at Meeting. Every act or decision done or made by a majority of the directors present at a meeting duly held at which a quorum is present shall be regarded as the act of the Board of Directors unless a greater number is required by law or by this Certificate of Incorporation.

7. Removal. Subject to the rights of holders of any series of Preferred Stock, directors of the Corporation may be removed only for cause and only by the affirmative vote of the holders of at least seventy-five percent (75%) of the votes which all the stockholders would be entitled to cast in any annual election of directors or class of directors.

8. Vacancies. Subject to the rights of holders of any series of Preferred Stock, any vacancy or newly created directorship in the Board of Directors, however occurring, shall be filled only by vote of a majority of the directors then in office, although less than a quorum, or by a sole remaining director and shall not be filled by the stockholders. A director elected to fill a vacancy shall hold office until the next election of the class for which such director shall have been chosen, subject to the election and qualification of a successor and to such director's earlier death, resignation or removal.

9. Stockholder Nominations and Introduction of Business, Etc. Advance notice of stockholder nominations for election of directors and other business to be brought by stockholders before a meeting of stockholders shall be given in the manner provided by the By-laws of the Corporation.

10. Amendments to Article. Notwithstanding any other provisions of law, this Certificate of Incorporation or the By-laws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the votes which all the stockholders would be entitled to cast in any annual election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article NINTH.

TENTH: Stockholders of the Corporation may not take any action by written consent in lieu of a meeting. Notwithstanding any other provisions of law, this Certificate of Incorporation or the By-laws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the votes which all the stockholders would be entitled to cast in any annual election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article TENTH.

ELEVENTH: Special meetings of stockholders for any purpose or purposes may be called at any time by only the Board of Directors, the Chairman of the Board or the Chief Executive Officer, and may not be called by any other person or persons. Business transacted at any special meeting of stockholders shall be limited to matters relating to the purpose or purposes stated in the notice of meeting. Notwithstanding any other provisions of law, this Certificate of Incorporation or the By-laws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the votes which all the stockholders would be entitled to cast in any annual election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article ELEVENTH.

* * *

IN WITNESS WHEREOF, this Restated Certificate of Incorporation has been executed by a duly authorized officer of the Corporation on this seventh day of March, 2023.

By: /s/ Steven Kelly
Name: Steven Kelly
Title: President and Chief Executive Officer

Exhibit 3.2

AMENDED AND RESTATED BY-LAWS

OF

CARISMA THERAPEUTICS INC.

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ARTICLE I

STOCKHOLDERS

1.1 Place of Meetings. All meetings of stockholders shall be held at such place, if any, as may be designated from time to time by the Board of Directors, the Chairman of the Board or the Chief Executive Officer or, if not so designated, at the principal executive office of the corporation. The Board of Directors may, in its sole discretion, determine that a meeting shall not be held at any place, but shall instead be held solely by means of remote communication in a manner consistent with the General Corporation Law of the State of Delaware.

1.2 Annual Meeting. The annual meeting of stockholders for the election of directors to succeed those whose terms expire and for the transaction of such other business as may properly be brought before the meeting shall be held on a date and at an hour designated by the Board of Directors, the Chairman of the Board or the Chief Executive Officer. The corporation may postpone, reschedule or cancel any previously scheduled annual meeting of stockholders.

1.3 Special Meetings. Special meetings of stockholders for any purpose or purposes may be called at any time only by the Board of Directors, and may not be called by any other person or persons. Business transacted at any special meeting of stockholders shall be limited to matters relating to the purpose or purposes stated in the notice of meeting. The corporation may postpone, reschedule or cancel any previously scheduled special meeting of stockholders.

1.4 Record Date for Stockholder Meetings. In order that the corporation may determine the stockholders entitled to notice of any meeting of stockholders or any adjournment thereof, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date shall not be more than 60 nor less than 10 days before the date of such meeting. If the Board of Directors so fixes a date, such date shall also be the record date for determining the stockholders entitled to vote at such meeting unless the Board of Directors determines, at the time it fixes such record date, that a later date on or before the date of the meeting shall be the date for making such determination. If no record date is fixed by the Board of Directors, the record date for determining stockholders entitled to notice of and to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held. A determination of stockholders of record entitled to notice of and to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for determination of stockholders entitled to vote at the adjourned meeting, and in such case shall also fix as the record date for stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determination of stockholders entitled to vote in accordance herewith at the adjourned meeting.

1.5 Notice of Meetings. Except as otherwise provided by law, the Certificate of Incorporation or these by-laws, notice of each meeting of stockholders, whether annual or special, shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting as of the record date for determining the stockholders entitled to notice of the meeting. Without limiting the manner by which notice otherwise may be given to stockholders, any notice shall be effective if given in accordance with Section 232 of the General Corporation Law of the State of Delaware. The notices of all meetings shall state the place, if any, date and hour of the meeting, the means of remote communications, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting, and the record date for determining stockholders entitled to vote at the meeting, if such date is different from the record date for determining stockholders entitled to notice of the meeting. The notice of a special meeting shall state, in addition, the purpose or purposes for which the meeting is called.

1.6 Voting List. The corporation shall prepare, no later than the tenth day before each meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting (provided, however, if the record date for determining the stockholders entitled to vote is less than 10 days before the meeting date, the list shall reflect the stockholders entitled to vote as of the tenth day before the meeting), arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder for any purpose germane to the meeting for a period of 10 days ending on the day before the meeting date: (a) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (b) during ordinary business hours, at the principal place of business of the corporation. Except as otherwise provided by law, the stock ledger shall be the only evidence as to who are the stockholders entitled to examine the list of stockholders required by this Section 1.6 or to vote in person or by proxy at any meeting of stockholders.

1.7 Quorum. Except as otherwise provided by law, the Certificate of Incorporation or these by-laws, the holders of a majority in voting power of the shares of the capital stock of the corporation issued and outstanding and entitled to vote at the meeting, present in person, present by means of remote communication in a manner, if any, authorized by the Board of Directors in its sole discretion, or represented by proxy, shall constitute a quorum for the transaction of business; provided, however, that where a separate vote by a class or classes or series of capital stock is required by law or the Certificate of Incorporation, the holders of a majority in voting power of the shares of such class or classes or series of the capital stock of the corporation issued and outstanding and entitled to vote on such matter, present in person, present by means of remote communication in a manner, if any, authorized by the Board of Directors in its sole discretion, or represented by proxy, shall constitute a quorum entitled to take action with respect to the vote on such matter. A quorum, once established at a meeting, shall not be broken by the withdrawal of enough votes to leave less than a quorum.

1.8 Adjournments. Any meeting of stockholders may be adjourned from time to time to reconvene at any other time and to any other place at which a meeting of stockholders may be held under these by-laws by the chairman of the meeting. When a meeting is adjourned to another time or place (including an adjournment taken to address a technical failure to convene or continue a meeting using remote communication), notice need not be given of the adjourned meeting if the time, place, if any, thereof, and the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such adjourned meeting are (i) announced at the meeting at which the adjournment is taken, (ii) displayed, during the time scheduled for the meeting, on the same electronic network used to enable stockholders and proxy holders to participate in the meeting by means of remote communication or (iii) set forth in the notice of meeting given in accordance with Section 1.5 hereof. At the adjourned meeting, the corporation may transact any business that might have been transacted at the original meeting. If the adjournment is for more than 30 days, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting. If after the adjournment a new record date for determination of stockholders entitled to vote is fixed for the adjourned meeting, the Board of Directors shall fix a new record date for determining stockholders entitled to notice of such adjourned meeting that is the same or an earlier date as that fixed for determination of stockholders entitled to vote at such adjourned meeting, and shall give notice of the adjourned meeting to each stockholder of record entitled to vote at such adjourned meeting as of the record date fixed for notice of such adjourned meeting.

1.9 Voting and Proxies. Each stockholder shall have one vote upon the matter in question for each share of stock entitled to vote held of record by such stockholder and a proportionate vote for each fractional share so held, unless otherwise provided by law or the Certificate of Incorporation. Each stockholder of record entitled to vote at a meeting of stockholders may vote in person (including by means of remote communications, if any, by which stockholders may be deemed to be present in person and vote at such meeting) or may authorize another person or persons to vote for such stockholder by a proxy executed or transmitted in a manner permitted by the General Corporation Law of the State of Delaware by the stockholder or such stockholder's authorized officer, director, employee or agent and delivered (including by electronic transmission) to the Secretary of the corporation. No such proxy shall be voted upon after three years from the date of its execution, unless the proxy expressly provides for a longer period. Any person directly or indirectly soliciting proxies from stockholders of the corporation must use a proxy card color other than white, the color white being reserved for the exclusive use of the Board of Directors of the corporation.

1.10 Action at Meeting. When a quorum is present at any meeting, any matter other than the election of directors to be voted upon by the stockholders at such meeting shall be decided by the vote of the holders of shares of stock having a majority in voting power of the votes cast by the holders of all of the shares of stock present or represented at the meeting and voting affirmatively or negatively on such matter (or if there are two or more classes or series of stock entitled to vote as separate classes, then in the case of each such class or series, the holders of a majority in voting power of the shares of stock of that class or series present or represented at the meeting and voting affirmatively or negatively on such matter), except when a different vote is required by law, the Certificate of Incorporation or these by-laws. When a quorum is present at any meeting, any election by stockholders of directors shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election.

1.11 Nomination of Directors.

(a) Except for any directors entitled to be elected by the holders of preferred stock, only persons who are nominated in accordance with the procedures in this Section 1.11 shall be eligible for election as directors at any meeting of stockholders. Nomination for election to the Board of Directors at a meeting of stockholders may be made only (i) by or at the direction of the Board of Directors or (ii) by any stockholder of the corporation who (x) has given timely notice thereof in writing to the Secretary in accordance with the procedures in, and otherwise complies with, Section 1.11(b), (y) is a stockholder of record who is entitled to vote for the election of such nominee on the date of the giving of such notice and on the record date for the determination of stockholders entitled to vote at such meeting and (z) is entitled to vote at such meeting. Notwithstanding the foregoing or anything herein to the contrary, a stockholder of the corporation may make nominations for election to the Board of Directors at a special meeting of stockholders pursuant to the foregoing clause (ii) only if the Board of Directors has determined, in accordance with Section 1.3, that directors shall be elected at such special meeting and at such time that the stockholders are not prohibited from filling vacancies or newly created directorships on the Board of Directors. The number of nominees a stockholder may nominate for election at a meeting (or in the case of a stockholder giving the notice on behalf of a beneficial owner, the number of nominees a stockholder may nominate for election at the meeting on behalf of such beneficial owner) shall not exceed the number of directors to be elected at such meeting.

(b) To be timely, a stockholder's notice must be received in writing by the Secretary at the principal executive office of the corporation as follows: (1) in the case of an election of directors at an annual meeting of stockholders, not less than 90 days nor more than 120 days prior to the first anniversary of the preceding year's annual meeting; provided, however, that in the event that the date of the annual meeting is advanced by more than 30 days, or delayed by more than 60 days, from the first anniversary of the preceding year's annual meeting, or if no annual meeting was held or deemed to have been held in the preceding year, a stockholder's notice must be so received not earlier than the 120th day prior to such annual meeting and not later than the close of business on the later of (A) the 90th day prior to such annual meeting and (B) the tenth day following the day on which notice of the date of such annual meeting was given or public disclosure of the date of such annual meeting was made, whichever first occurs; or (2) in the case of an election of directors at a special meeting of stockholders, provided that the Board of Directors has determined, in accordance with Section 1.3, that directors shall be elected at such special meeting and the stockholders are not then prohibited from filling vacancies or newly created directorships on the Board of Directors, and provided further that the nomination made by the stockholder is for one of the director positions that the Board of Directors has determined will be filled at such special meeting, not earlier than the 120th day prior to such special meeting and not later than the close of business on the later of (x) the 90th day prior to such special meeting and (y) the tenth day following the day on which notice of the date of such special meeting was given or public disclosure of the date of such special meeting was made, whichever first occurs. In no event shall the adjournment or postponement of a meeting (or the public disclosure thereof) commence a new time period (or extend any time period) for the giving of a stockholder's notice.

The stockholder's notice to the Secretary shall set forth: (A) as to each proposed nominee (1) such person's name, age, business address and, if known, residence address, (2) such person's principal occupation or employment, (3) the class and series and number of shares of stock of the corporation that are, directly or indirectly, owned, beneficially or of record, by such person, (4) a description of all direct and indirect compensation and other material monetary agreements, arrangements and understandings during the past three years, and any other material relationships, between or among (x) the stockholder, the beneficial owner, if any, on whose behalf the nomination is being made and the respective affiliates and associates of, or others acting in concert with, such stockholder and such beneficial owner (each, a "Stockholder Associated Person"), on the one hand, and (y) each proposed nominee, and his or her respective affiliates and associates, or others acting in concert with such nominee(s), on the other hand, including all information that would be required to be disclosed pursuant to Item 404 of Regulation S-K if the stockholder making the nomination and any beneficial owner on whose behalf the nomination is made or any Stockholder Associated Person were the "registrant" for purposes of such Item and the proposed nominee were a director or executive officer of such registrant, and (5) any other information concerning such person that must be disclosed as to nominees in proxy solicitations pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (the "Exchange Act"); and (B) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination is being made (1) the name and address of such stockholder, as they appear on the corporation's books, and of such beneficial owner, (2) the class and series and number of shares of stock of the corporation that are, directly or indirectly, owned, beneficially or of record, by such stockholder and such beneficial owner, (3) a description of any material interest related to the nomination of such stockholder, such beneficial owner and/or any Stockholder Associated Person, (4) a description of any agreement, arrangement or understanding between or among such stockholder, such beneficial owner and/or any Stockholder Associated Person and each proposed nominee and any other person or persons (including their names) pursuant to which the nomination(s) are being made or who may participate in the solicitation of proxies or votes in favor of electing such nominee(s), (5) a description of any agreement, arrangement or understanding (including any derivative or short positions, swaps, profit interests, options, warrants, convertible securities, stock appreciation or similar rights, hedging transactions, and borrowed or loaned shares) that has been entered into by, or on behalf of, such stockholder, such beneficial owner and/or any Stockholder Associated Person, the effect or intent of which is to mitigate loss to, manage risk or benefit of share price changes for, or increase or decrease the voting power of, such stockholder, such beneficial owner and/or any Stockholder Associated Person with respect to shares of stock of the corporation, (6) any other information relating to such stockholder, such beneficial owner and/or any Stockholder Associated Person that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for the election of directors in a contested election pursuant to Section 14 of the Exchange Act and the rules and regulations promulgated thereunder, (7) a representation that such stockholder intends to appear in person or by proxy at the meeting to nominate the person(s) named in its notice, (8) a representation that such stockholder, such beneficial owner and/or any Stockholder Associated Person has complied, and will comply, with all applicable requirements of state law and the Exchange Act with respect to matters set forth in this Section 1.11, and (9) a representation whether such stockholder, such beneficial owner and/or any Stockholder Associated Person intends or is part of a group that intends (x) to deliver a proxy statement and/or form of proxy to holders of at least the percentage of the corporation's outstanding capital stock reasonably believed by such stockholder or such beneficial owner to be sufficient to elect the nominee (and such representation shall be included in any such proxy statement and form of proxy) and/or (y) otherwise to solicit proxies or votes from stockholders in support of such nomination (and such representation shall be included in any such solicitation materials). Not later than 10 days after the record date for the meeting, the information required by Items (A)(1)-(5) and (B)(1)-(6) of the prior sentence shall be supplemented by the stockholder giving the notice to provide updated information as of the record date. In addition, to be effective, the stockholder's notice must also be accompanied by the written consent of the proposed nominee to being named in the corporation's proxy statement and accompanying proxy card as a nominee and to serve as a director if elected. The corporation may require any proposed nominee to furnish such other information as the corporation may reasonably require to determine, among other things, the eligibility of such proposed nominee to serve as a director of the corporation or whether such nominee would be independent under applicable Securities and Exchange Commission and stock exchange rules and the corporation's publicly disclosed corporate governance guidelines. Notwithstanding anything herein to the contrary, a stockholder shall not have complied with this Section 1.11(b) if the stockholder, beneficial owner and/or any Stockholder Associated Person solicits or does not solicit, as the case may be, proxies or votes in support of such stockholder's nominee in contravention of the representations with respect thereto required by this Section 1.11.

Such notice must also be accompanied by a representation as to whether or not such stockholder, beneficial owner and/or any Stockholder Associated Person intends to solicit proxies in support of any director nominees other than the corporation's nominees in accordance with Rule 14a-19 under the Exchange Act, and, where such stockholder, beneficial owner and/or Stockholder Associated Person intends to so solicit proxies, the notice and information required by Rule 14a-19(b) under the Exchange Act. Notwithstanding anything to the contrary in these by-laws, unless otherwise required by law, if any stockholder, beneficial owner and/or Stockholder Associated Person (i) provides notice pursuant to Rule 14a-19(b) under the Exchange Act and (ii) subsequently fails to comply with the requirements of Rule 14a-19(a)(2) and Rule 14a-19(a)(3) under the Exchange Act (or fails to timely provide reasonable evidence sufficient to satisfy the corporation that such stockholder, beneficial owner and/or Stockholder Associated Person has met the requirements of Rule 14a-19(a)(3) promulgated under the Exchange Act in accordance with the following sentence), then the nomination of each of the director nominees proposed by such stockholder, beneficial owner and/or Stockholder Associated Person shall be disregarded, notwithstanding that proxies or votes in respect of the election of such proposed nominees may have been received by the corporation (which proxies and votes shall be disregarded). Upon request by the corporation, if any stockholder, beneficial owner and/or Stockholder Associated Person provides notice pursuant to Rule 14a-19(b) under the Exchange Act, such stockholder, beneficial owner and/or Stockholder Associated Person shall deliver to the corporation, no later than five business days prior to the applicable meeting, reasonable evidence that it has met the requirements of Rule 14a-19(a)(3) under the Exchange Act.

(c) The chairman of any meeting (and, in advance of any meeting, the Board of Directors) shall have the power and duty to determine whether a nomination was made in accordance with the provisions of this Section 1.11 (including whether the stockholder, beneficial owner and/or any Stockholder Associated Person did, or did not so solicit, as the case may be, proxies or votes in support of such stockholder's nominee in compliance with the representations with respect thereto required by this Section 1.11), and if the chairman (or the Board of Directors) should determine that a nomination was not made in accordance with the provisions of this Section 1.11, the chairman shall so declare to the meeting and such nomination shall not be brought before the meeting.

(d) Except as otherwise required by law (including Rule 14a-19 under the Exchange Act), nothing in this Section 1.11 shall obligate the corporation or the Board of Directors to include in any proxy statement, proxy card or other stockholder communication distributed on behalf of the corporation or the Board of Directors the name of or other information with respect to any nominee for director submitted by a stockholder.

(e) Notwithstanding the foregoing provisions of this Section 1.11, unless otherwise required by law, if the stockholder (or a qualified representative of the stockholder) does not appear at the meeting to present a nomination, such nomination shall not be brought before the meeting, notwithstanding that proxies in respect of such nominee may have been received by the corporation. For purposes of this Section 1.11, to be considered a "qualified representative of the stockholder", a person must be a duly authorized officer, manager or partner of such stockholder or must be authorized by a written instrument executed by such stockholder or an electronic transmission delivered by such stockholder to act for such stockholder as proxy at the meeting of stockholders and such person must produce such written instrument or electronic transmission, or a reliable reproduction of the written instrument or electronic transmission, at the meeting of stockholders.

(f) For purposes of this Section 1.11, "public disclosure" shall include disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the Exchange Act.

(g) Unless the corporation elects otherwise, a stockholder's notice to the corporation of nominations shall be in writing exclusively (and not in an electronic transmission) and shall be delivered exclusively by hand (including, without limitation, overnight courier service) or by certified or registered mail, return receipt requested, and the corporation shall not be required to accept delivery of any document not in such written form or so delivered.

1.12 Notice of Business at Annual Meetings.

(a) At any annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. To be properly brought before an annual meeting, business must be (1) specified in the notice of meeting (or any supplement thereto) given by or at the direction of the Board of Directors, (2) otherwise properly brought before the meeting by or at the direction of the Board of Directors, or (3) properly brought before the meeting by a stockholder. For business to be properly brought before an annual meeting by a stockholder, (i) if such business relates to the nomination of a person for election as a director of the corporation, the procedures in Section 1.11 must be complied with and (ii) if such business relates to any other matter, the business must constitute a proper matter under Delaware law for stockholder action and the stockholder must (x) have given timely notice thereof in writing to the Secretary in accordance with the procedures in, and otherwise complied with, Section 1.12(b), (y) be a stockholder of record who is entitled to vote on such business on the date of the giving of such notice and on the record date for the determination of stockholders entitled to vote at such annual meeting and (z) be entitled to vote at such annual meeting.

(b) To be timely, a stockholder's notice must be received in writing by the Secretary at the principal executive office of the corporation not less than 90 days nor more than 120 days prior to the first anniversary of the preceding year's annual meeting; provided, however, that in the event that the date of the annual meeting is advanced by more than 30 days, or delayed by more than 60 days, from the first anniversary of the preceding year's annual meeting, or if no annual meeting was held or deemed to have been held in the preceding year, a stockholder's notice must be so received not earlier than the 120th day prior to such annual meeting and not later than the close of business on the later of (x) the 90th day prior to such annual meeting and (y) the tenth day following the day on which notice of the date of such annual meeting was given or public disclosure of the date of such annual meeting was made, whichever first occurs. In no event shall the adjournment or postponement of an annual meeting (or the public disclosure thereof) commence a new time period (or extend any time period) for the giving of a stockholder's notice.

The stockholder's notice to the Secretary shall set forth: (A) as to each matter the stockholder proposes to bring before the annual meeting (1) a brief description of the business desired to be brought before the annual meeting, (2) the text of the proposal (including the exact text of any resolutions proposed for consideration and, in the event that such business includes a proposal to amend the by-laws, the exact text of the proposed amendment), and (3) the reasons for conducting such business at the annual meeting, and (B) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the proposal is being made (1) the name and address of such stockholder, as they appear on the corporation's books, and of such beneficial owner, (2) the class and series and number of shares of stock of the corporation that are, directly or indirectly, owned, beneficially or of record, by such stockholder and such beneficial owner, (3) a description of any material interest of such stockholder, such beneficial owner and/or any Stockholder Associated Person in the business proposed to be brought before the annual meeting, (4) a description of any agreement, arrangement or understanding between or among such stockholder, such beneficial owner, any Stockholder Associated Person and any other person or persons (including their names) in connection with the proposal of such business or who may participate in the solicitation of proxies in favor of such proposal, (5) a description of any agreement, arrangement or understanding (including any derivative or short positions, swaps, profit interests, options, warrants, convertible securities, stock appreciation or similar rights, hedging transactions, and borrowed or loaned shares) that has been entered into by, or on behalf of, such stockholder, such beneficial owner and/or any Stockholder Associated Person, the effect or intent of which is to mitigate loss to, manage risk or benefit of share price changes for, or increase or decrease the voting power of, such stockholder, such beneficial owner and/or any Stockholder Associated Person with respect to shares of stock of the corporation, (6) any other information relating to such stockholder, such beneficial owner and/or any Stockholder Associated Person that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for the business proposed pursuant to Section 14 of the Exchange Act and the rules and regulations promulgated thereunder, (7) a representation that such stockholder intends to appear in person or by proxy at the annual meeting to bring such business before the meeting, (8) a representation that such stockholder, such beneficial owner and/or any Stockholder Associated Person has complied, and will comply, with all applicable requirements of state law and the Exchange Act with respect to matters set forth in this Section 1.12, and (9) a representation whether such stockholder, such beneficial owner and/or any Stockholder Associated Person intends or is part of a group that intends (x) to deliver a proxy statement and/or form of proxy to holders of at least the percentage of the corporation's outstanding capital stock required to approve or adopt the proposal (and such representation shall be included in any such proxy statement and form of proxy) and/or (y) otherwise to solicit proxies or votes from stockholders in support of such proposal (and such representation shall be included in any such solicitation materials). Not later than 10 days after the record date for the meeting, the information required by Items (A)(3) and (B)(1)-(6) of the prior sentence shall be supplemented by the stockholder giving the notice to provide updated information as of the record date. Notwithstanding anything in these by-laws to the contrary, no business shall be conducted at any annual meeting of stockholders except in accordance with the procedures in this Section 1.12; provided that any stockholder proposal that complies with Rule 14a-8 of the proxy rules (or any successor provision) promulgated under the Exchange Act and is to be included in the corporation's proxy statement for an annual meeting of stockholders shall be deemed to comply with the notice requirements of this Section 1.12. Notwithstanding anything herein to the contrary, a stockholder shall not have complied with this Section 1.12(b) if the stockholder, beneficial owner and/or any Stockholder Associated Person solicits or does not solicit, as the case may be, proxies or votes in support of such stockholder's proposal in contravention of the representations with respect thereto required by this Section 1.12.

(c) The chairman of any annual meeting (and, in advance of any annual meeting, the Board of Directors) shall have the power and duty to determine whether business was properly brought before the annual meeting in accordance with the provisions of this Section 1.12 (including whether the stockholder, beneficial owner and/or any Stockholder Associated Person did or did not so solicit, as the case may be, proxies or votes in support of such stockholder's proposal in compliance with the representation with respect thereto required by this Section 1.12), and if the chairman (or the Board of Directors) should determine that business was not properly brought before the annual meeting in accordance with the provisions of this Section 1.12, the chairman shall so declare to the meeting and such business shall not be brought before the annual meeting.

(d) Except as otherwise required by law, nothing in this Section 1.12 shall obligate the corporation or the Board of Directors to include in any proxy statement or other stockholder communication distributed on behalf of the corporation or the Board of Directors information with respect to any proposal submitted by a stockholder.

(e) Notwithstanding the foregoing provisions of this Section 1.12, unless otherwise required by law, if the stockholder (or a qualified representative of the stockholder) does not appear at the annual meeting to present business, such business shall not be considered, notwithstanding that proxies in respect of such business may have been received by the corporation.

(f) For purposes of this Section 1.12, the terms "qualified representative of the stockholder" and "public disclosure" shall have the same meaning as in Section 1.11.

(g) Unless the corporation elects otherwise, a stockholder's notice to the corporation of other business shall be in writing exclusively (and not in an electronic transmission) and shall be delivered exclusively by hand (including, without limitation, overnight courier service) or by certified or registered mail, return receipt requested, and the corporation shall not be required to accept delivery of any document not in such written form or so delivered.

1.13 Conduct of Meetings.

(a) Unless otherwise provided by the Board of Directors, meetings of stockholders shall be presided over by the Chairman of the Board, if any, or in the Chairman's absence by the Vice Chairman of the Board, if any, or in the Vice Chairman's absence by the Chief Executive Officer, or in the Chief Executive Officer's absence, by the President, or in the President's absence by a Vice President, or in the absence of all of the foregoing persons by a chairman designated by the Board of Directors. The Secretary shall act as secretary of the meeting, but in the Secretary's absence the chairman of the meeting may appoint any person to act as secretary of the meeting.

(b) The Board of Directors may adopt by resolution such rules, regulations and procedures for the conduct of any meeting of stockholders of the corporation as it shall deem appropriate including, without limitation, such guidelines and procedures as it may deem appropriate regarding the participation by means of remote communication of stockholders and proxyholders not physically present at a meeting. Except to the extent inconsistent with such rules, regulations and procedures as adopted by the Board of Directors, the chairman of any meeting of stockholders shall have the right and authority to convene and (for any or no reason) to recess and/or adjourn the meeting and prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairman, are appropriate for the proper conduct of the meeting. Such rules, regulations or procedures, whether adopted by the Board of Directors or prescribed by the chairman of the meeting, may include, without limitation, the following: (i) the establishment of an agenda or order of business for the meeting; (ii) rules and procedures for maintaining order at the meeting and the safety of those present; (iii) limitations on attendance at or participation in the meeting to stockholders entitled to vote at the meeting, their duly authorized and constituted proxies or such other persons as shall be determined by the Board of Directors or the chairman of any meeting; (iv) restrictions on entry to the meeting after the time fixed for the commencement thereof; and (v) limitations on the time allotted to questions or comments by participants. Unless and to the extent determined by the Board of Directors or the chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with the rules of parliamentary procedure.

(c) The chairman of the meeting shall announce at the meeting when the polls for each matter to be voted upon at the meeting will be opened and closed. After the polls close, no ballots, proxies or votes or any revocations or changes thereto may be accepted.

(d) In advance of any meeting of stockholders, the corporation shall appoint one or more inspectors of election to act at the meeting and make a written report thereof. One or more other persons may be designated as alternate inspectors to replace any inspector who fails to act. If no inspector or alternate is present, ready and willing to act at a meeting of stockholders, the chairman of the meeting shall appoint one or more inspectors to act at the meeting. Unless otherwise required by law, inspectors may be officers, employees or agents of the corporation. Each inspector, before entering upon the discharge of such inspector's duties, shall take and sign an oath faithfully to execute the duties of inspector with strict impartiality and according to the best of such inspector's ability. The inspector shall have the duties prescribed by law and, when the vote is completed, shall make a certificate of the result of the vote taken and of such other facts as may be required by law. Every vote taken by ballots shall be counted by a duly appointed inspector or duly appointed inspectors.

1.14 No Action by Consent in Lieu of a Meeting. Except as otherwise provided by the Certificate of Incorporation, stockholders of the corporation may not take any action by consent in lieu of a meeting of stockholders.

ARTICLE II

DIRECTORS

2.1 General Powers. The business and affairs of the corporation shall be managed by or under the direction of a Board of Directors, who may exercise all of the powers of the corporation except as otherwise provided by law or the Certificate of Incorporation.

2.2 Number, Election and Qualification. The number of directors of the corporation shall be the number fixed by, or determined in the manner provided in, the Certificate of Incorporation. Election of directors need not be by written ballot. Directors need not be stockholders of the corporation.

2.3 Chairman of the Board; Vice Chairman of the Board. The Board of Directors may appoint from its members a Chairman of the Board and a Vice Chairman of the Board, neither of whom need be an employee or officer of the corporation. If the Board of Directors appoints a Chairman of the Board, such Chairman shall perform such duties and possess such powers as are assigned by the Board of Directors and, if the Chairman of the Board is also designated as the corporation's Chief Executive Officer, shall have the powers and duties of the Chief Executive Officer prescribed in Section 3.7 of these by-laws. If the Board of Directors appoints a Vice Chairman of the Board, such Vice Chairman shall perform such duties and possess such powers as are assigned by the Board of Directors or the Chairman of the Board. Unless otherwise provided by the Board of Directors, the Chairman of the Board or, in the Chairman's absence, the Vice Chairman of the Board, if any, shall preside at all meetings of the Board of Directors.

2.4 Terms of Office. Directors shall be elected for such terms and in the manner provided by the Certificate of Incorporation and applicable law. Accordingly, subject to the rights of holders of any series of Preferred Stock to elect directors, the Board of Directors shall be and is divided into three classes: Class I, Class II and Class III. Each class shall consist, as nearly as may be possible, of one-third of the total number of directors constituting the entire Board of Directors. The allocation of directors among classes shall be determined by resolution of the Board of Directors. The term of each director shall continue until the election and qualification of his or her successor and be subject to his or her earlier death, resignation or removal.

2.5 Quorum. The greater of (a) a majority of the directors at any time in office and (b) one-third of the number of directors established by the Board of Directors pursuant to the Certificate of Incorporation shall constitute a quorum of the Board of Directors. If at any meeting of the Board of Directors there shall be less than such a quorum, a majority of the directors present may adjourn the meeting from time to time without further notice other than announcement at the meeting, until a quorum shall be present.

2.6 Action at Meeting. Every act or decision done or made by a majority of the directors present at a meeting duly held at which a quorum is present shall be regarded as the act of the Board of Directors, unless a greater number is required by law or by the Certificate of Incorporation.

2.7 Removal. Directors of the corporation may be removed in the manner specified by the Certificate of Incorporation and applicable law.

2.8 Vacancies. Any vacancy or newly-created directorship on the Board of Directors, however occurring, shall be filled in the manner specified by the Certificate of Incorporation and applicable law.

2.9 Resignation. Any director may resign by delivering a resignation in writing or by electronic transmission to the corporation at its principal executive office or to the Chairman of the Board, the Chief Executive Officer, the President or the Secretary. Such resignation shall be effective upon receipt unless it is specified to be effective at some later time or upon the happening of some later event.

2.10 Regular Meetings. Regular meetings of the Board of Directors may be held without notice at such time and place as shall be determined from time to time by the Board of Directors; provided that any director who is absent when such a determination is made shall be given notice of the determination. A regular meeting of the Board of Directors may be held without notice immediately after and at the same place as the annual meeting of stockholders.

2.11 Special Meetings. Special meetings of the Board of Directors may be held at any time and place designated in a call by the Chairman of the Board, the Chief Executive Officer, the President, two or more directors, or by one director in the event that there is only a single director in office.

2.12 Notice of Special Meetings. Notice of the time and place of any special meeting of directors shall be given to each director by the Secretary or by the officer or one of the directors calling the meeting. Notice shall be duly given to each director (a) in person, by telephone or by electronic transmission at least 24 hours in advance of the meeting, (b) by delivering written notice by hand, to such director's last known business or home address at least 48 hours in advance of the meeting, or (c) by sending written notice by first-class mail to such director's last known business or home address at least 72 hours in advance of the meeting. A notice or waiver of notice of a meeting of the Board of Directors need not specify the purposes of the meeting.

2.13 Meetings by Conference Communications Equipment. Directors may participate in meetings of the Board of Directors or any committee thereof by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation by such means shall constitute presence in person at such meeting.

2.14 Action by Consent. Any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting if all members of the Board of Directors or committee, as the case may be, consent to the action in writing or by electronic transmission. After an action is taken, the consent or consents relating thereto shall be filed with the minutes of proceedings of the Board of Directors or committee in the same paper or electronic form as the minutes are maintained.

2.15 Committees. The Board of Directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation with such lawfully delegable powers and duties as the Board of Directors thereby confers, to serve at the pleasure of the Board of Directors. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or members of the committee present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the Board of Directors and subject to the provisions of law, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation and may authorize the seal of the corporation to be affixed to all papers that may require it. Each such committee shall keep minutes and make such reports as the Board of Directors may from time to time request. Except as the Board of Directors may otherwise determine, any committee may make rules for the conduct of its business, but unless otherwise provided by the directors or in such rules, its business shall be conducted as nearly as possible in the same manner as is provided in these by-laws for the Board of Directors. Except as otherwise provided in the Certificate of Incorporation, these by-laws, or the resolution of the Board of Directors designating the committee, a committee may create one or more subcommittees, each subcommittee to consist of one or more members of the committee, and delegate to a subcommittee any or all of the powers and authority of the committee.

2.16 Emergency by-laws. In the event of any emergency, disaster, catastrophe or other similar emergency condition of a type described in Section 110(a) of the General Corporation Law of the State of Delaware (an "Emergency"), notwithstanding any different or conflicting provisions in the General Corporation Law of the State of Delaware, the Certificate of Incorporation or these by-laws, during such Emergency:

(a) Notice. A meeting of the Board of Directors or a committee thereof may be called by any director, the Chairman of the Board, the Chief Executive Officer, the President or the Secretary by such means as, in the judgment of the person calling the meeting, may be feasible at the time, and notice of any such meeting of the Board of Directors or any committee may be given, in the judgment of the person calling the meeting, only to such directors as it may be feasible to reach at the time and by such means as may be feasible at the time. Such notice shall be given at such time in advance of the meeting as, in the judgment of the person calling the meeting, circumstances permit.

(b) Quorum. The director or directors in attendance at a meeting called in accordance with Section 2.16(a) shall constitute a quorum.

(c) Liability. No officer, director or employee acting in accordance with this Section 2.16 shall be liable except for willful misconduct. No amendment, repeal or change to this Section 2.16 shall modify the prior sentence with regard to actions taken prior to the time of such amendment, repeal or change.

ARTICLE III

OFFICERS

3.1 Titles. The officers of the corporation shall consist of a Chief Executive Officer, a President, a Secretary, a Treasurer and such other officers with such other titles as the Board of Directors shall determine, including one or more Vice Presidents, Assistant Treasurers and Assistant Secretaries. The Board of Directors may appoint such other officers as it may deem appropriate.

3.2 Election. The Chief Executive Officer, President, Treasurer and Secretary shall be elected annually by the Board of Directors at its first meeting following the annual meeting of stockholders. Other officers may be appointed by the Board of Directors at such meeting or at any other meeting.

3.3 Qualification. No officer need be a stockholder. Any two or more offices may be held by the same person.

3.4 Tenure. Except as otherwise provided by law, the Certificate of Incorporation or these by-laws, each officer shall hold office until such officer's successor is elected and qualified, unless a different term is specified in the resolution electing or appointing such officer, or until such officer's earlier death, resignation or removal.

3.5 Resignation and Removal. Any officer may resign by delivering a resignation in writing or by electronic transmission to the corporation at its principal executive office or to the Chief Executive Officer, the President or the Secretary. Such resignation shall be effective upon receipt unless it is specified to be effective at some later time or upon the happening of some later event. Any officer may be removed at any time, with or without cause, by the Board of Directors. Except as the Board of Directors may otherwise determine, no officer who resigns or is removed shall have any right to any compensation as an officer for any period following such officer's resignation or removal, or any right to damages on account of such removal, whether such officer's compensation be by the month or by the year or otherwise, unless such compensation is expressly provided for in a duly authorized written agreement with the corporation.

3.6 Vacancies. The Board of Directors may fill any vacancy occurring in any office for any reason and may, in its discretion, leave unfilled for such period as it may determine any offices. Each such successor shall hold office for the unexpired term of such officer's predecessor and until a successor is elected and qualified, or until such officer's earlier death, resignation or removal.

3.7 President; Chief Executive Officer. Unless the Board of Directors has designated another person as the corporation's Chief Executive Officer, the President shall be the Chief Executive Officer of the corporation. The Chief Executive Officer shall have general charge and supervision of the business of the corporation subject to the direction of the Board of Directors, and shall perform all duties and have all powers that are commonly incident to the office of the chief executive or that are delegated to such officer by the Board of Directors. The President shall perform such other duties and shall have such other powers as the Board of Directors or the Chief Executive Officer (if the President is not the Chief Executive Officer) may from time to time prescribe. In the event of the absence, inability or refusal to act of the Chief Executive Officer or the President (if the President is not the Chief Executive Officer), the Vice President (or if there shall be more than one, the Vice Presidents in the order determined by the Board of Directors) shall perform the duties of the Chief Executive Officer and when so performing such duties shall have all the powers of and be subject to all the restrictions upon the Chief Executive Officer.

3.8 Vice Presidents. Each Vice President shall perform such duties and possess such powers as the Board of Directors or the Chief Executive Officer may from time to time prescribe. The Board of Directors may assign to any Vice President the title of Executive Vice President, Senior Vice President or any other title selected by the Board of Directors.

3.9 Secretary and Assistant Secretaries. The Secretary shall perform such duties and shall have such powers as the Board of Directors or the Chief Executive Officer may from time to time prescribe. In addition, the Secretary shall perform such duties and have such powers as are incident to the office of the secretary, including without limitation the duty and power to give notices of all meetings of stockholders and special meetings of the Board of Directors, to attend all meetings of stockholders and the Board of Directors and keep a record of the proceedings, to maintain a stock ledger and prepare lists of stockholders and their addresses as required, to be custodian of corporate records and the corporate seal and to affix and attest to the same on documents.

Any Assistant Secretary shall perform such duties and possess such powers as the Board of Directors, the Chief Executive Officer or the Secretary may from time to time prescribe. In the event of the absence, inability or refusal to act of the Secretary, the Assistant Secretary (or if there shall be more than one, the Assistant Secretaries in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Secretary.

In the absence of the Secretary or any Assistant Secretary at any meeting of stockholders or directors, the chairman of the meeting shall designate a temporary secretary to keep a record of the meeting.

3.10 Treasurer and Assistant Treasurers. The Treasurer shall perform such duties and shall have such powers as may from time to time be assigned by the Board of Directors or the Chief Executive Officer. In addition, the Treasurer shall perform such duties and have such powers as are incident to the office of treasurer, including without limitation the duty and power to keep and be responsible for all funds and securities of the corporation, to deposit funds of the corporation in depositories selected in accordance with these by-laws, to disburse such funds as ordered by the Board of Directors, to make proper accounts of such funds, and to render as required by the Board of Directors statements of all such transactions and of the financial condition of the corporation.

The Assistant Treasurers shall perform such duties and possess such powers as the Board of Directors, the Chief Executive Officer or the Treasurer may from time to time prescribe. In the event of the absence, inability or refusal to act of the Treasurer, the Assistant Treasurer (or if there shall be more than one, the Assistant Treasurers in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Treasurer.

3.11 Salaries. Officers of the corporation shall be entitled to such salaries, compensation or reimbursement as shall be fixed or allowed from time to time by the Board of Directors.

3.12 Delegation of Authority. The Board of Directors may from time to time delegate the powers or duties of any officer to any other officer or agent, notwithstanding any provision hereof.

ARTICLE IV

CAPITAL STOCK

4.1 Issuance of Stock. Subject to the provisions of the Certificate of Incorporation, the whole or any part of any unissued balance of the authorized capital stock of the corporation or the whole or any part of any shares of the authorized capital stock of the corporation held in the corporation's treasury may be issued, sold, transferred or otherwise disposed of by vote of the Board of Directors in such manner, for such lawful consideration and on such terms as the Board of Directors may determine.

4.2 Stock Certificates; Uncertificated Shares. The shares of the corporation shall be represented by certificates, provided that the Board of Directors may provide by resolution or resolutions that some or all of any or all classes or series of the corporation's stock shall be uncertificated shares. Any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the corporation. Every holder of stock of the corporation represented by certificates shall be entitled to have a certificate, in such form as may be prescribed by law and by the Board of Directors, representing the number of shares held by such holder registered in certificate form. Each such certificate shall be signed in a manner that complies with Section 158 of the General Corporation Law of the State of Delaware by or in the name of any two officers of the corporation, each of whom is an authorized officer for this purpose.

Each certificate representing shares of stock that are subject to any restriction on transfer pursuant to the Certificate of Incorporation, these by-laws, applicable securities laws or any agreement among any number of stockholders or among such holders and the corporation shall have conspicuously noted on the face or back of the certificate either the full text of the restriction or a statement of the existence of such restriction.

If the corporation shall be authorized to issue more than one class of stock or more than one series of any class, the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of each certificate representing shares of such class or series of stock, provided that in lieu of the foregoing requirements there may be set forth on the face or back of each certificate representing shares of such class or series of stock a statement that the corporation will furnish without charge to each stockholder who so requests a copy of the full text of the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

Within a reasonable time after the issuance or transfer of uncertificated shares, the registered owner thereof shall be given a notice, in writing or by electronic transmission, containing the information required to be set forth or stated on certificates pursuant to Sections 151, 156, 202(a) or 218(a) of the General Corporation Law of the State of Delaware or, with respect to Section 151 of the General Corporation Law of the State of Delaware, a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

4.3 Transfers. Shares of stock of the corporation shall be transferable in the manner prescribed by law and in these by-laws. Transfers of shares of stock of the corporation shall be made only on the books of the corporation or by transfer agents designated to transfer shares of stock of the corporation. Subject to applicable law, shares of stock represented by certificates shall be transferred only on the books of the corporation by the surrender to the corporation or its transfer agent of the certificate representing such shares properly endorsed or accompanied by a written assignment or power of attorney properly executed, and with such proof of authority or the authenticity of signature as the corporation or its transfer agent may reasonably require. Uncertificated shares may be transferred by delivery of a written assignment or power of attorney properly executed, and with such proof of authority or the authenticity of signature as the corporation or its transfer agent may reasonably require. Except as may be otherwise required by law, the Certificate of Incorporation or these by-laws, the corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect to such stock, regardless of any transfer, pledge or other disposition of such stock until the shares have been transferred on the books of the corporation in accordance with the requirements of these by-laws.

4.4 Lost, Stolen or Destroyed Certificates. The corporation may issue a new certificate of stock or uncertificated shares in place of any previously issued certificate alleged to have been lost, stolen or destroyed, upon such terms and conditions as the corporation may prescribe, including the presentation of reasonable evidence of such loss, theft or destruction and the giving of such indemnity and posting of such bond as the corporation may require for the protection of the corporation or any transfer agent or registrar.

4.5 Regulations. The issue, transfer, conversion and registration of shares of stock of the corporation shall be governed by such other regulations as the Board of Directors may establish.

ARTICLE V

GENERAL PROVISIONS

5.1 Fiscal Year. Except as from time to time otherwise designated by the Board of Directors, the fiscal year of the corporation shall begin on the first day of January of each year and end on the last day of December in each year.

5.2 Corporate Seal. The corporate seal shall be in such form as shall be approved by the Board of Directors.

5.3 Record Date for Purposes Other Than Stockholder Meetings. In order that the corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights, entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action (other than with respect to determining stockholders entitled to notice of and/or to vote at a meeting of stockholders, which is addressed in Section 1.4 of these by-laws), the Board of Directors may fix a record date, which shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall not be more than 60 days prior to such action. If no such record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto.

5.4 Waiver of Notice. Whenever notice is required to be given by law, the Certificate of Incorporation or these by-laws, a written waiver signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to notice, whether provided before, at or after the time of the event for which notice is to be given, shall be deemed equivalent to notice required to be given to such person. Neither the business nor the purpose of any meeting need be specified in any such waiver. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

5.5 Voting of Securities. Except as the Board of Directors may otherwise designate, the Chief Executive Officer, the President, the Secretary or the Treasurer may waive notice of, vote, or appoint any person or persons to vote, on behalf of the corporation at, and act as, or appoint any person or persons to act as, proxy or attorney-in-fact for this corporation (with or without power of substitution) at, any meeting of stockholders or securityholders of any other entity, the securities of which may be held by this corporation, or with respect to the execution of any written or electronic consent in the name of the corporation as a holder of such securities.

5.6 Evidence of Authority. A certificate by the Secretary, or an Assistant Secretary, or a temporary Secretary, as to any action taken by the stockholders, directors, a committee or any officer or representative of the corporation shall as to all persons who rely on the certificate in good faith be conclusive evidence of such action.

5.7 Certificate of Incorporation. All references in these by-laws to the Certificate of Incorporation shall be deemed to refer to the Certificate of Incorporation of the corporation, as amended and/or restated and in effect from time to time, including the terms of any certificate of designations of any series of preferred stock.

5.8 Severability. Any determination that any provision of these by-laws is for any reason inapplicable, illegal or ineffective shall not affect or invalidate any other provision of these by-laws.

5.9 Pronouns. All pronouns used in these by-laws shall be deemed to refer to the masculine, feminine or neuter, singular or plural, as the identity of the person or persons may require.

ARTICLE VI

AMENDMENTS

These by-laws may be altered, amended or repealed, in whole or in part, or new by-laws may be adopted by the Board of Directors or by the stockholders as provided in the Certificate of Incorporation.

Exhibit 10.4

REGISTRATION RIGHTS AGREEMENT

THIS REGISTRATION RIGHTS AGREEMENT (this "**Agreement**"), is made as of the 7th day of March, 2023, by and among CARISMA Therapeutics Inc., a Delaware corporation ("**Carisma**"), and each of the investors listed on Schedule A hereto, each of which is referred to in this Agreement as an "**Investor**".

RECITALS

WHEREAS, Carisma is party to that certain Agreement and Plan of Merger and Reorganization, by and among Carisma, Sesen Bio, Inc. ("**Sesen Bio**") and Seahawk Merger Sub, Inc. ("**Merger Sub**"), dated as of September 20, 2022 (the "**Merger Agreement**"), pursuant to which Merger Sub will merge with and into Carisma, with Carisma surviving as a wholly-owned subsidiary of Sesen Bio (the "**Merger**");

WHEREAS, following the Merger, Sesen Bio will change its name to Carisma Therapeutics Inc. ("**PubCo**");

WHEREAS, Carisma and the Investors are parties to a Subscription Agreement, dated as of September 20, 2022 (the "**Subscription Agreement**"), pursuant to which the Investors, severally and not jointly, are purchasing shares of common stock of Carisma (the "**Shares**") immediately prior to the closing of the Merger and subject to the satisfaction or waiver of all conditions to the closing of the Merger set forth in the Merger Agreement (other than the Closing under the Subscription Agreement and other than those conditions which, by their nature, are to be satisfied at the closing of the transactions contemplated by the Merger Agreement), which Shares will, upon closing of the Merger, be exchanged for shares of PubCo's common stock, par value $0.001 per share (the "**Common Stock**"); and

WHEREAS, in connection with the consummation of the transactions contemplated by the Subscription Agreement, and subject to the terms of the Subscription Agreement, the Parties desire to enter into this Agreement in order to grant certain rights to the Investors as set forth below.

NOW, THEREFORE, the parties to this Agreement further agree as follows:

1. Definitions. For purposes of this Agreement:

1.1 "**Affiliate**" means, with respect to any specified Person, any other Person who, directly or indirectly, controls, is controlled by, or is under common control with such Person, including without limitation any general partner, managing member, limited partner, officer, director or trustee of such Person, or any venture capital fund or other investment fund now or hereafter existing that is controlled by one or more general partners, managing members or investment adviser of, or shares the same management company or investment adviser with, such Person.

1.2 "**Board of Directors**" means the board of directors of the Company.

1.3 "**Company**" means CARISMA Therapeutics Inc. for all periods prior to closing of the Merger and PubCo for all periods after closing of the Merger.

1.4 "**Damages**" means any loss, damage, claim or liability (joint or several) to which a party hereto may become subject under the Securities Act, the Exchange Act, or other federal or state law, insofar as such loss, damage, claim or liability (or any action in respect thereof) arises out of or is based upon: (i) any untrue statement or alleged untrue statement of a material fact contained in any registration statement of the Company, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto; (ii) an omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading; or (iii) any violation or alleged violation by the indemnifying party (or any of its agents or Affiliates) of the Securities Act, the Exchange Act, any state securities law, or any rule or regulation promulgated under the Securities Act, the Exchange Act, or any state securities law.

1.5 "**Exchange Act**" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

1.6 "**Excluded Registration**" means (i) a registration relating to the sale or grant of securities to employees of the Company or a subsidiary pursuant to a stock option, stock purchase, equity incentive or similar plan; (ii) a registration relating to an SEC Rule 145 transaction; (iii) a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities; or (iv) a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered.

1.7 "**Form S-3**" means such form under the Securities Act as in effect on the date hereof or any registration form under the Securities Act subsequently adopted by the SEC that permits forward incorporation of substantial information by reference to other documents filed by the Company with the SEC.

1.8 "**Holder**" means any holder of Registrable Securities who is a party to this Agreement.

1.9 "**Immediate Family Member**" means a child, stepchild, grandchild, parent, stepparent, grandparent, spouse, life partner or similar statutorily-recognized domestic partner, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, including, adoptive relationships, of a natural person referred to herein.

1.10 "**Initiating Holders**" means, collectively, Holders who properly initiate a registration request under this Agreement.

1.11 "**Mandatory Registration Statement**" means a registration statement on Form S-3 (unless the Company is not then eligible to register for resale the Common Stock on such registration statement, in which case registration shall be on another appropriate form for such purpose) in satisfaction of the requirements set forth in Subsection 2.1 and covering the resale of the Registrable Subscription Securities.

1.12 "**Permitted Transferee**" means, with respect to an Investor, an Affiliate of such Investor or any other investment fund or account managed or advised by the investment manager who acts on behalf of such Investor.

1.13 "**Person**" means any individual, corporation, partnership, trust, limited liability company, association or other entity.

1.14 "**Preferred Stock**" means, collectively, (i) the Series A Preferred Stock, $0.0001 par value per share, of Carisma, (ii) the Special Voting Preferred Stock, $0.0001 par value per share, of Carisma, (iii) the Series B Preferred Stock, $0.0001 par value per share, of Carisma, (iv) the Series B Special Voting Preferred Stock, $0.0001 par value per share, of Carisma and (v) for the avoidance of doubt, any of the Preferred Stock referenced in clauses (i) or (iii) issued upon the exchange of the Class B Shares, with a nominal value of one tenth of one eurocent (EUR 0.001), or the Class B-1 Shares, with a nominal value of one tenth of one eurocent (EUR 0.001), of CARISMA Therapeutics S.à r.l., a société à responsabilité limitée.

1.15 "**Registrable Securities**" means the Registrable Existing Securities and the Registrable Subscription Securities.

1.16 "**Registrable Existing Securities**" means (i) any shares of Common Stock issued to an Investor in exchange for such Investor's shares of Preferred Stock upon closing of the Merger and (ii) any Common Stock issued as (or issuable upon the conversion or exercise of any warrant, right, or other security that is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of, the shares referenced in clause (i) above; excluding in all cases, however, (a) any Registrable Securities sold by a Person in a transaction in which the applicable rights under this Agreement are not assigned pursuant to Subsection 8.1 and (b) any shares for which registration rights have terminated pursuant to Subsection 3.6.

1.17 "**Registrable Subscription Securities**" means (i) any shares of Common Stock issued to an Investor in exchange for the Shares upon closing of the Merger and (ii) any Common Stock issued as (or issuable upon the conversion or exercise of any warrant, right, or other security that is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of, the shares referenced in clause (i) above; excluding in all cases, however, (a) any Registrable Securities sold or transferred pursuant to a Mandatory Registration Statement, (b) any Registrable Securities that have been sold or can be sold without restriction pursuant to SEC Rule 144 or another similar exemption under the Securities Act and without the requirement to be in compliance with subsection (c)(1) of SEC Rule 144 (or any successor thereto), (c) any Registrable Securities sold by a Person in a transaction in which the applicable rights under this Agreement are not assigned pursuant to Subsection 8.1, and (d) for the avoidance of doubt, any Shares that are registered on a Form S-4.

1.18 "**Registrable Securities then outstanding**" means the number of shares of outstanding Common Stock that are Registrable Securities.

1.19 "**SEC**" means the Securities and Exchange Commission.

1.20 "**SEC Rule 144**" means Rule 144 promulgated by the SEC under the Securities Act.

1.21 "**SEC Rule 145**" means Rule 145 promulgated by the SEC under the Securities Act.

1.22 "**Securities Act**" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

1.23 "**Selling Expenses**" means all underwriting discounts, selling commissions, and stock transfer taxes applicable to the sale of Registrable Securities, and fees and disbursements of counsel for any Holder, except for the fees and disbursements of the Selling Holder Counsel borne and paid by the Company as provided in Section 5.

1.24 "**Selling Securityholder Questionnaire**" means a form of selling securityholder questionnaire as may be reasonably requested by the Company from time to time.

2. Mandatory Registration Rights.

2.1 Mandatory Registration Statement.

(a) Registration Statement. The Company shall use its reasonable best efforts to file a Mandatory Registration Statement with the SEC as promptly as reasonably practicable and in any event within sixty (60) days after the date of this Agreement (the "**Filing Date**") to register all of the Registrable Subscription Securities under the Securities Act. The Company shall use its reasonable best efforts to cause such Mandatory Registration Statement to be declared effective within ninety (90) days following the Filing Date (or, in the event the staff of the SEC reviews and has written comments to the Mandatory Registration Statement, within one hundred twenty (120) days following the Filing Date), such efforts to include, without limiting the generality of the foregoing, preparing and filing with the SEC any financial statements or other information that is required to be filed prior to the effectiveness of such Mandatory Registration Statement. Such Mandatory Registration Statement shall not include any shares of Common Stock or other securities for the account of any other holder without the prior written consent of a majority of the Registrable Subscription Securities then held by the Holders or Permitted Transferees.

(b) Filing; Effectiveness. The Company shall use its reasonable best efforts to keep the Mandatory Registration Statement continuously effective under the Securities Act for a period up to the earlier of (i) three (3) years from the date of this Agreement and (ii) the date that all Registrable Subscription Securities covered by such Mandatory Registration Statement have been sold or can be sold without restriction pursuant to SEC Rule 144 or another similar exemption under the Securities Act and without the requirement to be in compliance with subsection (c)(1) of SEC Rule 144 (or any successor thereto) (the "**Effectiveness Period**"). The Company shall notify the Holders in writing as promptly as reasonably practicable and in any event within three (3) business days after receiving notification from the SEC that a Mandatory Registration Statement has been declared effective or that a prospectus used in connection with such Mandatory Registration Statement has been filed.

(c) Rule 415; Cutback. If at any time the SEC takes the position that the offering of some or all of the Registrable Subscription Securities in the Mandatory Registration Statement is not eligible to be made on a delayed or continuous basis under the provisions of Rule 415 under the Securities Act ("**Rule 415**") or requires any Holder to be named as an "underwriter," the Company shall use commercially reasonable efforts to persuade the SEC that the offering contemplated by such Mandatory Registration Statement is a valid secondary offering and not an offering "by or on behalf of the issuer" as defined in Rule 415 and that none of the Holders is an "underwriter." In the event that, despite the Company's commercially reasonable efforts and compliance with the terms of this Subsection 2.1(c), the SEC does not alter its position, the Company shall (i) remove from such Mandatory Registration Statement such portion of the Registrable Subscription Securities (the "**Cut Back Shares**") and/or (ii) agree to such restrictions and limitations on the registration and resale of the Registrable Subscription Securities as the SEC may require to assure the Company's compliance with the requirements of Rule 415 (collectively, the "**SEC Restrictions**"); provided, however, that the Company shall not agree to name any Holder as an "underwriter" in such Mandatory Registration Statement without the prior written consent of such Holder. Any cut-back imposed on the Holders pursuant to this Subsection 2.1(c) shall be allocated among the Holders of Registrable Subscription Securities in proportion (as nearly as practicable) to the number of Registrable Subscription Securities owned by each Holder or in such proportion as shall be mutually agreed to by all such selling Holders, unless the SEC Restrictions require or provide otherwise. From and after such date as the Company is able to effect the registration of such Cut Back Shares, the Company shall use commercially reasonable efforts to file a Mandatory Registration Statement relating to such Cut Back Shares and to have such Mandatory Registration Statement declared effective by the SEC.

(d) Notwithstanding the foregoing, it is understood and agreed that a registration statement under the Securities Act may expire pursuant to the rules and regulations of the SEC after a specified date (currently, in the case of a shelf registration statement pursuant to Rule 415 under the Securities Act, three (3) years following the date it is declared effective by the SEC). It is agreed that any expiration of a registration statement pursuant to the rules and regulations of the SEC shall not represent a violation or breach of any of the Company's obligations under this Section 2; provided that in such case, prior to such expiration time, during the Effectiveness Period, the Company agrees to use its reasonable best efforts to prepare, file and cause to be declared effective a replacement Mandatory Registration Statement.

2.2 Removal of Legends.

(a) In connection with any sale, assignment, transfer or other disposition of the Registrable Subscription Securities by a Holder pursuant to SEC Rule 144 or pursuant to any other exemption under the Securities Act such that such Holder acquires freely tradable shares and upon compliance by the Holder with the requirements of this Agreement, if requested by the Holder, the Company shall cause the transfer agent for the Common Stock (the "**Transfer Agent**") to remove any restrictive legends related to the book entry account holding such Registrable Subscription Securities and make a new, unlegended entry for such book entry Registrable Subscription Securities sold or disposed of without restrictive legends within two (2) business days of any such request therefor from such Holder, provided that the Company has timely received from the Holder customary representations and other documentation reasonably acceptable to the Company in connection therewith.

(b) Subject to receipt from the Holder by the Company and the Transfer Agent of customary representations and other documentation reasonably acceptable to the Company and the Transfer Agent in connection therewith, upon the earliest of such time as the Registrable Subscription Securities (i) have been sold or transferred pursuant to an effective registration statement or (ii) have been sold or can be sold without restriction pursuant to SEC Rule 144 or another similar exemption under the Securities Act and without the requirement to be in compliance with subsection (c)(1) of SEC Rule 144 (or any successor thereto) (such earliest date, the "**Effective Date**"), the Company shall, in accordance with the provisions of this Subsection 2.2 and within two (2) business days of any request therefor from a Holder accompanied by such customary and reasonably acceptable documentation referred to above, (A) deliver to the Transfer Agent irrevocable instructions that the Transfer Agent shall make a new, unlegended entry for such book entry Registrable Subscription Securities, and (B) cause its counsel to deliver to the Transfer Agent one or more opinions to the effect that the removal of such legends in such circumstances may be effected under the Securities Act if required by the Transfer Agent to effect the removal of such legend in accordance with the provisions of this Agreement. The Company agrees that following the Effective Date or at such time as such legend is no longer required under this Subsection 2.2, it will, within two (2) business days of the delivery by a Holder to the Company or the Transfer Agent of a certificate representing shares issued with a restrictive legend and receipt from the Holder by the Company and the Transfer Agent of the customary representations and other documentation reasonably acceptable to the Company and the Transfer Agent in connection therewith that is referred to above, deliver or cause to be delivered to such Holder a certificate representing such Registrable Subscription Securities (or uncertificated interest therein) that is free from all restrictive and other legends. Registrable Subscription Securities subject to legend removal hereunder may be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder's prime broker with The Depository Trust Company as directed by such Holder. The Company shall be responsible for the fees of its Transfer Agent and all fees of The Depository Trust Company associated with such issuance.

3. Demand Registration Rights.

3.1 Demand Registration.

(a) Form S-3 Demand. If at any time after one hundred eighty (180) days after the effective date of the Merger and if at such time the Company is eligible to use a Form S-3 registration statement, the Company receives a request from Holders of at least ten percent (10%) of the Registrable Existing Securities then outstanding that the Company file a Form S-3 registration statement with respect to outstanding Registrable Existing Securities of such Holders having an anticipated aggregate offering price of at least $5,000,000, then the Company shall (i) within five (5) days after the date such request is given, give notice thereof (the "**Demand Notice**") to all Holders other than the Initiating Holders; and (ii) as promptly as reasonably practicable and in any event within sixty (60) days after the date such request is given by the Initiating Holders, file a Form S-3 registration statement under the Securities Act covering all Registrable Existing Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within twenty (20) days of the date the Demand Notice is given, and in each case, subject to the limitations of Subsections 3.1(b) and 3.3.

(b) Notwithstanding the foregoing obligations, if the Company furnishes to Holders requesting a registration pursuant to this Subsection 3.1 a certificate signed by the Company's chief executive officer stating that in the good faith judgment of the Board of Directors it would be materially detrimental to the Company and its stockholders for such registration statement to either become effective or remain effective for as long as such registration statement otherwise would be required to remain effective, because such action would (i) materially interfere with a significant acquisition, corporate reorganization, or other similar transaction involving the Company; (ii) require premature disclosure of material information that the Company has a bona fide business purpose for preserving as confidential; or (iii) render the Company unable to comply with requirements under the Securities Act or Exchange Act, then the Company shall have the right to defer taking action with respect to such filing for a period of not more than ninety (90) days after the request of the Initiating Holders is given; provided, however, that the Company may not invoke this right more than once in any twelve (12) month period; and provided further that the Company shall not register any securities for its own account or that of any other stockholder during such ninety (90) day period other than an Excluded Registration.

(c) The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Subsection 3.1(a) (i) during the period that is thirty (30) days before the Company's good faith estimate of the date of filing of, and ending on a date that is ninety (90) days after the effective date of, a Company-initiated registration, provided that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective; or (ii) if the Company has effected two (2) registrations pursuant to Subsection 3.1(a) within the twelve (12) month period immediately preceding the date of such request. A registration shall not be counted as "effected" for purposes of this Subsection 3.1(c) until such time as the applicable registration statement has been declared effective by the SEC, unless the Initiating Holders withdraw their request for such registration, elect not to pay the registration expenses therefor, and forfeit their right to one demand registration statement pursuant to Section 5, in which case such withdrawn registration statement shall be counted as "effected" for purposes of this Subsection 3.1(c); provided that if such withdrawal is during a period the Company has deferred taking action pursuant to Subsection 3.1(b), then the Initiating Holders may withdraw their request for registration and such registration will not be counted as "effected" for purposes of this Subsection 3.1(c).

3.2 Company Registration. If the Company proposes to register (including, for this purpose, a registration effected by the Company for stockholders other than the Holders) any of its Common Stock under the Securities Act in connection with the public offering of such securities solely for cash (other than in an Excluded Registration), the Company shall, at such time, promptly give each Holder notice of such registration. Upon the request of each Holder given within twenty (20) days after such notice is given by the Company, the Company shall, subject to the provisions of Subsection 3.3, cause to be registered all of the Registrable Existing Securities that each such Holder has requested to be included in such registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Subsection 3.2 before the effective date of such registration, whether or not any Holder has elected to include Registrable Existing Securities in such registration. The expenses (other than Selling Expenses) of such withdrawn registration shall be borne by the Company in accordance with Section 5.

3.3 Underwriting Requirements.

(a) If, pursuant to Subsection 3.1, the Initiating Holders intend to distribute the Registrable Existing Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to Subsection 3.1, and the Company shall include such information in the Demand Notice. The underwriter(s) will be selected by the Company and shall be reasonably acceptable to a majority in interest of the Initiating Holders. In such event, the right of any Holder to include such Holder's Registrable Existing Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Existing Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall (together with the Company as provided in Subsection 4.1(g)) enter into an underwriting agreement in customary form with the underwriter(s) selected for such underwriting. Notwithstanding any other provision of this Subsection 3.3, if the underwriter(s) advise(s) the Initiating Holders in writing that marketing factors require a limitation on the number of shares to be underwritten, then the Initiating Holders shall so advise all Holders of Registrable Existing Securities that otherwise would be underwritten pursuant hereto, and the number of Registrable Existing Securities that may be included in the underwriting shall be allocated among such Holders of Registrable Existing Securities, including the Initiating Holders, in proportion (as nearly as practicable) to the number of Registrable Existing Securities owned by each Holder or in such other proportion as shall mutually be agreed to by all such selling Holders; provided, however, that the number of Registrable Existing Securities held by the Holders to be included in such underwriting shall not be reduced unless all other securities are first entirely excluded from the underwriting.

(b) In connection with any offering involving an underwriting of shares of the Company's capital stock pursuant to Subsection 3.2, the Company shall not be required to include any of the Holders' Registrable Existing Securities in such underwriting unless the Holders accept the terms of the underwriting as agreed upon between the Company and its underwriters, and then only in such quantity as the underwriters in their sole discretion determine will not jeopardize the success of the offering by the Company. If the total number of securities, including Registrable Existing Securities, requested by stockholders to be included in such offering exceeds the number of securities to be sold (other than by the Company) that the underwriters in their reasonable discretion determine is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities, including Registrable Existing Securities, which the underwriters and the Company in their sole discretion determine will not jeopardize the success of the offering. If the underwriters determine that less than all of the Registrable Existing Securities requested to be registered can be included in such offering, then the Registrable Existing Securities that are included in such offering shall be allocated among the selling Holders in proportion (as nearly as practicable to) the number of Registrable Existing Securities owned by each selling Holder or in such other proportions as shall mutually be agreed to by all such selling Holders. Notwithstanding the foregoing, in no event shall (i) the number of Registrable Existing Securities included in the offering be reduced unless all other securities (other than securities to be sold by the Company) are first entirely excluded from the offering, or (ii) the number of Registrable Existing Securities included in the offering be reduced below thirty percent (30%) of the total number of securities included in such offering. For purposes of the provision in this Subsection 3.3(b) concerning apportionment, for any selling Holder that is a partnership, limited liability company, or corporation, the partners, members, retired partners, retired members, stockholders, and Affiliates of such Holder, or the estates and Immediate Family Members of any such partners, retired partners, members, and retired members and any trusts for the benefit of any of the foregoing Persons, shall be deemed to be a single "selling Holder," and any pro rata reduction with respect to such "selling Holder" shall be based upon the aggregate number of Registrable Existing Securities owned by all Persons included in such "selling Holder," as defined in this sentence.

(c) For purposes of Subsection 3.1, a registration shall not be counted as "effected" if, as a result of an exercise of the underwriter's cutback provisions in Subsection 3.3(a), fewer than fifty percent (50%) of the total number of Registrable Existing Securities that Holders have requested to be included in such registration statement are actually included.

3.4 Delay of Registration. No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any registration pursuant to this Agreement as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 3.

3.5 Limitations on Subsequent Registration Rights. From and after the date of this Agreement, the Company shall not, without the prior written consent of the Holders representing a majority of the voting power of the Registrable Existing Securities enter into any agreement with any holder or prospective holder of any securities of the Company that would (i) provide to such holder or prospective holder the right to include securities in any registration on other than either a pro rata basis with respect to the Registrable Existing Securities or on a subordinate basis after all Holders have had the opportunity to include in the registration and offering all shares of Registrable Existing Securities that they wish to so include or (ii) allow such holder or prospective holder to initiate a demand for registration of any securities held by such holder or prospective holder; provided that this limitation shall not apply to Registrable Existing Securities held by any investor of the Company that was a party to that certain Amended and Restated Investors' Rights Agreement, dated as of December 22, 2020, by and among the Company and the other parties named therein, but is not a party to this Agreement (each, a "**Series B Investor**").

3.6 Termination of Demand Registration Rights. The right of any Holder to request registration or inclusion of Registrable Existing Securities in any registration pursuant to Section 3 shall terminate upon the earliest to occur of:

(a) such time after the date of this Agreement as SEC Rule 144 or another similar exemption under the Securities Act is available for the sale of all of such Holder's shares and without the requirement to be in compliance with subsection (c)(1) of SEC Rule 144 (or any successor thereto); or

(b) the third (3rd) anniversary of the date of this Agreement.

4. Obligations of the Parties.

4.1 Obligations of the Company. Whenever required under this Agreement to effect the registration of any Registrable Securities, the Company shall, as expeditiously and as reasonably possible:

(a) prepare and file with the SEC a registration statement with respect to such Registrable Securities and use its reasonable, diligent efforts to cause such registration statement to become effective and (i) in the case of a Mandatory Registration Statement, keep such Mandatory Registration Statement effective from the Filing Date to the expiration of the Effectiveness Period, and (ii) in the case of a registration statement under Section 3, upon the request of the Holders of a majority of the Registrable Securities registered thereunder, keep such registration statement effective for a period of up to one hundred eighty (180) days or, if earlier, until the distribution contemplated in the registration statement has been completed; provided, however, that in the case of clause (ii) such one hundred eighty (180) day period shall be extended for a period of time equal to the period the Holder refrains, at the request of an underwriter of Common Stock (or other securities) of the Company, from selling any securities included in such registration;

(b) prepare and file with the SEC such amendments, including post-effective amendments, and supplements to such registration statement, and the prospectus used in connection with such registration statement, as may be necessary to comply with the Securities Act in order to enable the disposition of all securities covered by such registration statement and keep such registration statement effective for the period required pursuant to Subsection 4.1(a);

(c) promptly notify the applicable Holders, at any time during which a registration statement is required to be effective pursuant to Subsection 4.1(a), upon discovery that, or upon the happening of any event as a result of which, the prospectus used in connection with such registration statement includes an untrue statement of a material fact or omits to state any material fact required to be stated therein or necessary to make the statements therein not misleading in light of the circumstances then existing, and use reasonable best efforts to prepare, file with the SEC and furnish to such Holders as promptly as reasonably practicable a supplement to or an amendment of such prospectus as may be necessary so that the prospectus used in connection with such registration statement shall not include an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading in light of the circumstances then existing;

(d) use commercially reasonable efforts to (i) prevent the issuance of any stop order or other suspension of effectiveness of any registration statement and, (ii) if such order is issued, obtain the withdrawal of any such order at the earliest practical moment;

(e) furnish to the selling Holders such numbers of copies of a prospectus, including a preliminary prospectus, as required by the Securities Act, and such other documents as the Holders may reasonably request in order to facilitate their disposition of their Registrable Securities;

(f) use its commercially reasonable efforts to register and qualify the securities covered by such registration statement under such other securities or blue-sky laws of such jurisdictions as shall be reasonably requested by the selling Holders; provided that the Company shall not be required to qualify to do business or to file a general consent to service of process in any such states or jurisdictions, unless the Company is already subject to service in such jurisdiction and except as may be required by the Securities Act;

(g) in the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the underwriter(s) of such offering;

(h) use its commercially reasonable efforts to cause all such Registrable Securities covered by such registration statement to be listed on a national securities exchange or trading system and each securities exchange and trading system (if any) on which similar securities issued by the Company are then listed;

(i) provide a transfer agent and registrar for all Registrable Securities registered pursuant to this Agreement and provide a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration;

(j) promptly make available for inspection by the selling Holders, any underwriter(s) participating in any disposition pursuant to such registration statement, and any attorney or accountant or other agent retained by any such underwriter or selected by the selling Holders, all financial and other records, pertinent corporate documents, and properties of the Company, and cause the Company's officers, directors, employees, and independent accountants to supply all information reasonably requested by any such seller, underwriter, attorney, accountant, or agent, in each case, as necessary or advisable to verify the accuracy of the information in such registration statement and to conduct appropriate due diligence in connection therewith;

(k) promptly notify each selling Holder, after the Company receives notice thereof, of the time when such registration statement has been declared effective or a supplement to any prospectus forming a part of such registration statement has been filed;

(l) after such registration statement becomes effective, promptly notify each selling Holder of any request by the SEC that the Company amend or supplement such registration statement or prospectus; and

(m) promptly notify the applicable Holders in writing, if at any time during which a registration statement is required to be effective pursuant to Subsection 4.1(a), the Company does not satisfy the conditions specified in Rule 172 under the Securities Act and, as a result thereof, such Holders are required to make available a prospectus in connection with any disposition of Registrable Securities.

In addition, the Company shall ensure that, at all times after any registration statement covering a public offering of securities of the Company under the Securities Act shall have become effective, its insider trading policy shall provide that the Company's directors may implement a trading program under Rule 10b5-1 of the Exchange Act.

4.2 Obligations of the Holders.

(a) It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Agreement with respect to the Registrable Securities of any selling Holder that such Holder shall furnish in writing to the Company (i) a Selling Securityholder Questionnaire and (ii) any other information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such Registrable Securities as is reasonably required to effect the registration of such Holder's Registrable Securities. Such Holder shall execute such documents in connection with such registration as the Company may reasonably request. At least ten (10) business days prior to the first anticipated filing date of Mandatory Registration Statement, the Company shall notify each Holder of Registrable Subscription Securities of the information the Company requires from such Holder. Such Holder shall provide such information to the Company at least two (2) business days prior to the first anticipated filing date of such Mandatory Registration Statement.

(b) Each Holder agrees to cooperate with the Company, promptly furnish information to the Company and complete and execute such documents in connection with the preparation and filing of a registration statement hereunder, unless such Holder has notified the Company in writing of its election to exclude all of its Registrable Securities from such registration statement.

(c) Each Holder agrees that, upon receipt of any notice from the Company of the happening of an event pursuant to Section 4.1(c), such Holder will promptly discontinue disposition of Registrable Securities pursuant to any registration statement covering such Registrable Securities, until the Holder is advised by the Company that such dispositions may again be made. Each Holder further agrees that it shall sell its Registrable Securities in accordance with the Plan of Distribution set forth in the applicable prospectus. The Company may provide appropriate stop orders to enforce the provisions of this paragraph.

5. Expenses of Registration. All expenses (other than Selling Expenses) incurred in connection with registrations, filings, or qualifications pursuant to Section 2 or Section 3, including all registration, filing, and qualification fees; printers' and accounting fees; fees and disbursements of counsel for the Company; and, in the case of Section 3, the reasonable fees and disbursements, not to exceed $50,000, of one counsel for the selling Holders ("**Selling Holder Counsel**"), shall be borne and paid by the Company; provided, however, that the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Section 3 if the registration request is subsequently withdrawn at the request of the Holders of a majority of the Registrable Securities to be registered (in which case all selling Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be included in the withdrawn registration), unless the Holders of a majority of the Registrable Securities agree to forfeit their right to one registration pursuant to Subsection 3.1(a), as the case may be; provided further that if, at the time of such withdrawal, the Holders shall have learned of a material adverse change in the condition, business, or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness after learning of such information then the Holders shall not be required to pay any of such expenses and shall not forfeit their right to one registration pursuant to Subsection 3.1(a). All Selling Expenses relating to Registrable Securities registered pursuant to Section 2 or Section 3 shall be borne and paid by the Holders pro rata on the basis of the number of Registrable Securities registered on their behalf.

6. Reports Under Exchange Act. With a view to making available to the Holders the benefits of SEC Rule 144 and any other rule or regulation of the SEC that may at any time permit a Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3, the Company shall: (i) make and keep available adequate current public information, as those terms are understood and defined in SEC Rule 144; (ii) use commercially reasonable efforts to file with the SEC in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act; and (iii) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request (a) to the extent accurate, a written statement by the Company that it has complied with the reporting requirements of SEC Rule 144, the Securities Act, and the Exchange, or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (at any time the Company so qualifies); and (b) such other information as may be reasonably requested in availing any Holder of any rule or regulation of the SEC that permits the selling of any such securities without registration or pursuant to Form S-3 (at any time the Company so qualifies to use such form).

7. Indemnification. If any Registrable Securities are included in a registration statement under this Agreement:

7.1 Indemnification by Company. To the extent permitted by law, the Company will indemnify and hold harmless each selling Holder, and the partners, members, officers, directors, and stockholders of each such Holder; legal counsel and accountants for each such Holder; any underwriter (as defined in the Securities Act) for each such Holder; and each Person, if any, who controls such Holder or underwriter within the meaning of the Securities Act or the Exchange Act, against any Damages, and the Company will pay to each such Holder, underwriter, controlling Person, or other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Subsection 7.1 shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Company, which consent shall not be unreasonably withheld, nor shall the Company be liable for any Damages to the extent that they arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of any such Holder, underwriter, controlling Person, or other aforementioned Person expressly for use in connection with such registration.

7.2 Indemnification by Holders. To the extent permitted by law, each selling Holder, severally and not jointly, will indemnify and hold harmless the Company, and each of its directors, each of its officers who has signed the registration statement, each Person (if any), who controls the Company within the meaning of the Securities Act, legal counsel and accountants for the Company, any underwriter (as defined in the Securities Act), any other Holder selling securities in such registration statement, and any controlling Person of any such underwriter or other Holder, against any Damages, in each case only to the extent that such Damages arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of such selling Holder expressly for use in connection with such registration; and each such selling Holder will pay to the Company and each other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Subsection 7.2 shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Holder, which consent shall not be unreasonably withheld; and provided further that in no event shall the aggregate amounts payable by any Holder by way of indemnity or contribution under Subsections 7.2 and 7.4 exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of fraud or willful misconduct by such Holder.

7.3 Action against Parties; Notification. Promptly after receipt by an indemnified party under this Section 7 of notice of the commencement of any action (including any governmental action) for which a party may be entitled to indemnification hereunder, such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 7, give the indemnifying party notice of the commencement thereof. The indemnifying party shall have the right to participate in such action and, to the extent the indemnifying party so desires, participate jointly with any other indemnifying party to which notice has been given, and to assume the defense thereof with counsel mutually satisfactory to the parties; provided, however, that an indemnified party (together with all other indemnified parties that may be represented without conflict by one counsel) shall have the right to retain one separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such action. The failure to give notice to the indemnifying party within a reasonable time of the commencement of any such action shall relieve such indemnifying party of any liability to the indemnified party under this Section 7, to the extent that such failure materially prejudices the indemnifying party's ability to defend such action. The failure to give notice to the indemnifying party will not relieve it of any liability that it may have to any indemnified party otherwise than under this Section 7.

7.4 Contribution. To provide for just and equitable contribution to joint liability under the Securities Act in any case in which either: (i) any party otherwise entitled to indemnification hereunder makes a claim for indemnification pursuant to this Section 7 but it is judicially determined (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) that such indemnification may not be enforced in such case, notwithstanding the fact that this Section 7 provides for indemnification in such case, or (ii) contribution under the Securities Act may be required on the part of any party hereto for which indemnification is provided under this Section 7, then, and in each such case, such parties will contribute to the aggregate losses, claims, damages, liabilities, or expenses to which they may be subject (after contribution from others) in such proportion as is appropriate to reflect the relative fault of each of the indemnifying party and the indemnified party in connection with the statements, omissions, or other actions that resulted in such loss, claim, damage, liability, or expense, as well as to reflect any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by reference to, among other things, whether the untrue or allegedly untrue statement of a material fact, or the omission or alleged omission of a material fact, relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information, and opportunity to correct or prevent such statement or omission; provided, however, that, in any such case (x) no Holder will be required to contribute any amount in excess of the public offering price of all such Registrable Securities offered and sold by such Holder pursuant to such registration statement, and (y) no Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation; and provided further that in no event shall a Holder's liability pursuant to this Subsection 7.4, when combined with the amounts paid or payable by such Holder pursuant to Subsection 7.2, exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of willful misconduct or fraud by such Holder.

7.5 Miscellaneous. Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with the underwritten public offering are in conflict with the foregoing provisions, the provisions in the underwriting agreement shall control.

7.6 Survival. Unless otherwise superseded by an underwriting agreement entered into in connection with the underwritten public offering, the obligations of the Company and Holders under this Section 7 shall survive the completion of any offering of Registrable Securities in a registration under this Agreement, and otherwise shall survive the termination of this Agreement or any provision(s) of this Agreement.

8. Miscellaneous.

8.1 Successors and Assigns. The rights under this Agreement may be assigned (but only with all related obligations) by a Holder to a Permitted Transferee; provided, however, that (x) the Company is, within a reasonable time after such transfer, furnished with written notice of the name and address of such transferee and the Registrable Securities with respect to which such rights are being transferred; and (y) such transferee agrees in a written instrument delivered to the Company to be bound by and subject to the terms and conditions of this Agreement. The terms and conditions of this Agreement inure to the benefit of and are binding upon the respective successors and permitted assignees of the parties. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assignees any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided herein.

8.2 Governing Law. This Agreement shall be governed by the internal law of the State of Delaware, without regard to conflict of law principles that would result in the application of any law other than the law of the State of Delaware.

8.3 Counterparts. This Agreement may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, Uniform Electronic Transactions Act, the Electronic Signatures and Records Act or other applicable law, *e.g.*, www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes**.**

8.4 Titles and Subtitles. The titles and subtitles used in this Agreement are for convenience only and are not to be considered in construing or interpreting this Agreement.

8.5 Notices. All notices and other communications given or made pursuant to this Agreement shall be in writing and shall be deemed effectively given upon the earlier of actual receipt or (i) personal delivery to the party to be notified; (ii) when sent, if sent by electronic mail or facsimile during the recipient's normal business hours, and if not sent during normal business hours, then on the recipient's next business day; (iii) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid; or (iv) one (1) business day after the business day of deposit with a nationally recognized overnight courier, freight prepaid, specifying next-day delivery, with written verification of receipt. All communications shall be sent to the respective parties at their address as set forth on the signature page or Schedule A hereto, or to the principal office of the Company and to the attention of the Chief Executive Officer, in the case of the Company, or to such email address, facsimile number or address as subsequently modified by written notice given in accordance with this Subsection 8.5. If notice is given to the Company, a copy (which shall not constitute notice) shall also be sent to Wilmer Cutler Pickering Hale and Dorr LLP, 7 World Trade Center, 250 Greenwich Street, New York, NY 10007, Attention: Brian A. Johnson, Esq., and if notice is given to Stockholders, a copy shall also be given to (i) Stinson LLP, 1201 Walnut Street, Suite 2900, Kansas City, MO 64106, Attention: Jack Bowling, (ii) Fenwick & West LLP, 902 Broadway, New York, NY 10010, Attention: Ian Goldstein, Esq, and (iii) Orrick Herrington & Sutcliffe LLP, 51 West 52nd Street, New York, NY 10019-6142, Attention: Stephen Thau, Esq.

8.6 Amendments and Waivers. Any term of this Agreement may be amended, modified or terminated and the observance of any term of this Agreement may be waived (either generally or in a particular instance, and either retroactively or prospectively) only with the written consent of (a) the Company, (b) the holders of a majority of the Registrable Securities then outstanding; provided that (i) no provision of Section 2 may be amended, modified or terminated or the observance of any term waived without the written consent of the holders of a majority of the Registrable Subscription Securities and (ii) no provision of Section 3 may be amended, modified or terminated or the observance of any term waived without the written consent of the holders of a majority of the Registrable Existing Securities; provided further that any provision hereof may be waived by any waiving party on such party's own behalf, without the consent of any other party. Notwithstanding the foregoing, this Agreement may not be amended, modified or terminated and the observance of any term hereof may not be waived with respect to any Investor without the written consent of such Investor, unless such amendment, modification, termination, or waiver applies to all Investors in the same fashion. Notwithstanding the foregoing, Schedule A hereto may be amended by the Company from time to time (i) to add Permitted Transferees of any Registrable Securities in compliance with the terms of this Agreement without the consent of the other parties and (ii) to add any Series B Investor who becomes a party to this Agreement and is deemed to be an "Investor" for all purposes hereunder in accordance with Section 8.9 without the consent of the other parties. The Company shall give prompt notice of any amendment, modification or termination hereof or waiver hereunder to any applicable party hereto that did not consent in writing to such amendment, modification, termination, or waiver. Any amendment, modification, termination, or waiver effected in accordance with this Subsection 8.6 shall be binding on all parties hereto, regardless of whether any such party has consented thereto. No waivers of or exceptions to any term, condition, or provision of this Agreement, in any one or more instances, shall be deemed to be or construed as a further or continuing waiver of any such term, condition, or provision.

8.7 Severability. In case any one or more of the provisions contained in this Agreement is for any reason held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision of this Agreement, and such invalid, illegal, or unenforceable provision shall be reformed and construed so that it will be valid, legal, and enforceable to the maximum extent permitted by law.

8.8 Aggregation of Stock. All shares of Registrable Securities held or acquired by Affiliates shall be aggregated together for the purpose of determining the availability of any rights under this Agreement and such Affiliated persons may apportion such rights as among themselves in any manner they deem appropriate.

8.9 Additional Investors. Notwithstanding anything to the contrary contained herein, at the option of the Company, any Series B Investor may become a party to this Agreement by executing and delivering an additional counterpart signature page to this Agreement, and thereafter shall be deemed an "Investor" for all purposes hereunder. No action or consent by the Investors shall be required for such joinder to this Agreement by such Series B Investor, so long as such Series B Investor has agreed in writing to be bound by all of the obligations as an "Investor" hereunder.

8.10 Entire Agreement. This Agreement (including any Schedules and Exhibits hereto) constitutes the full and entire understanding and agreement among the parties with respect to the subject matter hereof, and any other written or oral agreement relating to the subject matter hereof existing between the parties is expressly canceled.

8.11 Dispute Resolution. The parties (a) hereby irrevocably and unconditionally submit to the jurisdiction of the state courts of the State of Delaware and to the jurisdiction of the United States District Court for the District of Delaware for the purpose of any suit, action or other proceeding arising out of or based upon this Agreement, (b) agree not to commence any suit, action or other proceeding arising out of or based upon this Agreement except in the state courts of the State of Delaware or the United States District Court for the District of Delaware, and (c) hereby waive, and agree not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding, any claim that it is not subject personally to the jurisdiction of the above-named courts, that its property is exempt or immune from attachment or execution, that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that this Agreement or the subject matter hereof may not be enforced in or by such court.

WAIVER OF JURY TRIAL: EACH PARTY HEREBY WAIVES ITS RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION BASED UPON OR ARISING OUT OF THIS AGREEMENT, THE OTHER TRANSACTION DOCUMENTS, THE SECURITIES OR THE SUBJECT MATTER HEREOF OR THEREOF. THE SCOPE OF THIS WAIVER IS INTENDED TO BE ALL-ENCOMPASSING OF ANY AND ALL DISPUTES THAT MAY BE FILED IN ANY COURT AND THAT RELATE TO THE SUBJECT MATTER OF THIS TRANSACTION, INCLUDING, WITHOUT LIMITATION, CONTRACT CLAIMS, TORT CLAIMS (INCLUDING NEGLIGENCE), BREACH OF DUTY CLAIMS, AND ALL OTHER COMMON LAW AND STATUTORY CLAIMS. THIS SECTION HAS BEEN FULLY DISCUSSED BY EACH OF THE PARTIES HERETO AND THESE PROVISIONS WILL NOT BE SUBJECT TO ANY EXCEPTIONS. EACH PARTY HERETO HEREBY FURTHER WARRANTS AND REPRESENTS THAT SUCH PARTY HAS REVIEWED THIS WAIVER WITH ITS LEGAL COUNSEL, AND THAT SUCH PARTY KNOWINGLY AND VOLUNTARILY WAIVES ITS JURY TRIAL RIGHTS FOLLOWING CONSULTATION WITH LEGAL COUNSEL.

8.12 Delays or Omissions. No delay or omission to exercise any right, power, or remedy accruing to any party under this Agreement, upon any breach or default of any other party under this Agreement, shall impair any such right, power, or remedy of such nonbreaching or nondefaulting party, nor shall it be construed to be a waiver of or acquiescence to any such breach or default, or to any similar breach or default thereafter occurring, nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. All remedies, whether under this Agreement or by law or otherwise afforded to any party, shall be cumulative and not alternative.

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IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

CARISMA THERAPEUTICS INC.

By: /s/ Steven Kelly
Name: Steven Kelly
Title: Chief Executive Officer

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

INVESTORS:

Pictet Thematic Private Equity, SICAV-RAIF –
Pictet Thematic Private Equity – Health Fund I

By: /s/ Christophe Vasselin
Name: Christophe Vasselin
Title: Assistant Vice-President

By: /s/ Julia Jeliazkov
Name: Julia Jeliazkov
Title: Head of Indirect Investment Services

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

INVESTORS:

HEALTHCAP VII LP
by its general partner HealthCap VII GP SA

By: /s/ Dag Richter
Name: Dag Richter
Title: Director

By: /s/ Fabrice Bernhard
Name: Fabrice Bernhard
Title: General Manager

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

INVESTORS:

ABBVIE BIOTECHNOLOGY LTD.

By: /s/ Arthur C. Price
Name: Arthur C. Price
Title: Director

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

INVESTORS:

WELLINGTON PARTNERS LIFE SCIENCES V GMBH & CO. KG
c/o Wellington Partners Life Sciences Venture
Capital Management GmbH

By: /s/ Dr. Regina Hodits
Name: Dr. Regina Hodits
Title: Managing Partner

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

INVESTORS:

SYMBIOSIS II, LLC

By: /s/ Chidozie Ugwumba
Name: Chidozie Ugwumba
Title: Managing Partner

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

INVESTORS:

THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA

By: /s/ John S. Swartley
Name: John S. Swartley
Title: Associate Vice Provost for Research and Managing Director for the Penn Center for Innovation

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

INVESTORS:

MRL VENTURES FUND, LLC

By: /s/ Peter Dudek
Name: Peter Dudek
Title: Partner

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

INVESTORS:

AJU LIFE SCIENCE 3.0 VENTURE FUND

By: /s/ Ji-won Kim
Name: Ji-won Kim
Title: Chief Executive Officer

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

INVESTORS:

LIVZON INTERNATIONAL VENTURES I

By: /s/ Yanggang Tang
Name: Yanggang Tang
Title: Director

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

INVESTORS:

b-to-v Partners S.à r.l.

By: /s/ Florian Schweitzer
Name: Florian Schweitzer
Title: Managing Director

By: /s/ Christian Schuetz
Name: Dr. Christian Schuetz
Title: Managing Director

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

INVESTORS:

AGENT CAPITAL FUND I LP
By: Agent Capital Fund I GP, LLC, its General Partner

By: /s/ Geeta Vemuri
Name: Dr. Geeta Vemuri
Title: Managing Member

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

INVESTORS:

TPG BIOTECHNOLOGY PARTNERS V, L.P.

By: /s/ Ken Murphy
Name: Ken Murphy
Title: Chief Operating Officer

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

INVESTORS:

4BIO VENTURES FUND II LP
Represented by its general partner
4BIO Ventures II GP Limited,
itself represented by its Director

By: /s/ Andrew Kozlov
Name: Andrew Kozlov
Title: Director

SCHEDULE A

Investors

Exhibit 10.5

CONTINGENT VALUE RIGHTS AGREEMENT

THIS CONTINGENT VALUE RIGHTS AGREEMENT, dated as of March 7, 2023 (this "***Agreement***"), is entered into by and among Sesen Bio, Inc., a Delaware corporation ("***Parent***"), and Computershare Inc. ("***Computershare***") and its affiliate, Computershare Trust Company, N.A., together, as the Rights Agent.

RECITALS

WHEREAS, Parent, Seahawk Merger Sub, Inc., a Delaware corporation ("***Merger Sub***"), and CARISMA Therapeutics Inc., a Delaware corporation (the "***Company***"), have entered into an Agreement and Plan of Merger and Reorganization, dated as of September 20, 2022 (as it may be amended or supplemented from time to time pursuant to the terms thereof, the "***Merger Agreement***"), pursuant to which Merger Sub will merge with and into the Company, with the Company surviving the Merger as a subsidiary of Parent; and

WHEREAS, pursuant to the Merger Agreement, Parent has agreed to provide to the holders of record of Parent's common stock, par value $0.001 per share ("***Parent Common Stock***"), immediately prior to the Effective Time, the right to receive certain contingent cash payments, on the terms and subject to the conditions hereinafter described.

NOW, THEREFORE, in consideration of the foregoing and the consummation of the transactions referred to above, Parent and the Rights Agent agree, for the proportionate benefit of all Holders (as hereinafter defined), as follows:

1. DEFINITIONS; CERTAIN RULES OF CONSTRUCTION

1.1 Definitions. Capitalized terms used but not otherwise defined herein will have the meanings ascribed to them in the Merger Agreement, unless expressly set forth otherwise herein. As used in this Agreement, the following terms will have the following meanings:

"***Acquiror***" has the meaning set forth in Section 7.3(a).

"***Acquisition***" has the meaning set forth in Section 7.3(a).

"***Acting Holders***" has the meaning set forth in Section 3.3(d)

"***Affiliate***" of a Person means any other Person that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, such Person. The term "control" (including the terms "controlled by" and "under common control with") means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise.

"***Agreement***" has the meaning set forth in the Preamble.

"***Asset Disposition Proceeds***" means, without duplication, any and all consideration of any kind that is paid to Parent, or is received by, Parent or any of its Affiliates during the CVR Term in respect of an Asset Disposition, if any. The value of any securities (whether debt or equity) or other non-cash property constituting Asset Disposition Proceeds shall be determined as follows: (A) the value of securities for which there is an established public market shall be equal to the volume weighted average of their closing market prices for the five (5) trading days ending the day prior to the date of payment to, or receipt by, Parent or its relevant Affiliate, and (B) the value of securities that have no established public market and the value of consideration that consists of other non-cash property, shall be the fair market value thereof as of the date of payment to, or receipt by, Parent or its relevant Affiliate. Asset Disposition Proceeds shall be deemed to not include proceeds arising out of a Parent Change of Control.

"***Assignee***" has the meaning set forth in Section 7.3(a).

"***Board of Directors***" means the board of directors of Parent.

"***Board Resolution***" means a copy of the resolution(s) certified by the secretary or an assistant secretary (or other comparable officer) of Parent that have been duly adopted by the Board of Directors and are in full force and effect on the date of such approval, and delivered to the Rights Agent.

"***Business Day***" means any day other than a Saturday, Sunday or other day on which banks in New York, New York are authorized or obligated by Law to be closed.

"***Company***" has the meaning set forth in the Recitals.

"***Computershare***" has the meaning set forth in the Preamble.

"***CVR Payment***" has the meaning set forth in Section 2.4(a).

"***CVR Payment Amount***" means, with respect to each Holder, an amount equal to (a) (i) the applicable Total Payment Amount, less (ii) applicable accrued and documented Permitted Deductions, as calculated in accordance with GAAP, divided by (b) the total number of CVRs and then multiplied by the total number of CVRs held by such Holder as reflected on the CVR Register (rounded down to the nearest whole cent).

"***CVR Register***" has the meaning set forth in Section 2.3(b).

"***CVR Sale Assets***" means any and all assets, tangible and intangible, including, without limitation, patents, patent applications, know-how, trade secrets and other intellectual property rights, data, documentation, agreements and licenses, inventory related to Vicineum™, also known as VB4-845, which Parent or any of its subsidiaries owned or had rights to, as of immediately prior to the Effective Time.

"***CVR Term***" means the period beginning on the date hereof and ending on the earlier of (a) the final CVR Payment with respect to any Roche Payment Amount and Asset Disposition Proceeds, as applicable, being delivered to each Holder in accordance with Section 2.4 of this Agreement or (b) March 31, 2027.

"***CVRs***" means the rights of Holders to receive contingent cash payments pursuant to the Merger Agreement and this Agreement.

"***Disposition***" means the sale, license, transfer, disposition or other monetizing event of any CVR Sale Assets, in each case (i) during the CVR Term and (ii) in a transaction identified by Parent's financial advisor who was engaged as of the Effective Time for the purpose of identifying and proposing a potential Disposition transaction to Parent. For clarity, a Disposition constitutes an Asset Disposition.

"***DTC***" means The Depository Trust Company or any successor thereto.

"***Funds***" has the meaning set forth in Section 7.9.

"***Holder***" means a Person in whose name a CVR is registered in the CVR Register at the applicable time.

"***Merger Agreement***" has the meaning set forth in the Recitals.

"***Merger Sub***" has the meaning set forth in the Recitals.

"***Officer's Certificate***" means a certificate signed by the chief executive officer, president, chief financial officer, any vice president, the controller, the treasurer or the secretary, in each case of Parent, in his or her capacity as such an officer, and delivered to the Rights Agent.

"***Parent***" has the meaning set forth in the Preamble.

"***Parent Change of Control***" means a merger, consolidation, business combination or other similar transaction involving Parent or its subsidiaries or a sale of all or substantially all of the assets or a majority of the equity securities of Parent; provided that Parent Change of Control shall not include such a transaction if at the time of such transaction the only remaining non-cash assets held by Parent are the Potentially Transferable Assets. For clarity, the term Asset Disposition as used in this Agreement shall be deemed to not include any Parent Change of Control.

"***Parent Common Stock***" has the meaning set forth in the Recitals.

"***Permitted Deductions***" means the following costs or expenses, without duplication (as approved by the Board of Directors, including, if applicable, the Parent Designee (as defined in the Merger Agreement)):

(a) any applicable Tax (including any unreimbursed applicable value added or sales tax) imposed on the Total Payment Amount and payable by Parent or any of its Affiliates to any tax authority and, without duplication, any income or other similar Taxes payable by Parent or any of its Affiliates that would not have been incurred by Parent or any of its Affiliates but for the Total Payment Amount; provided that, for purposes of calculating income Taxes incurred by Parent and its Affiliates in respect of the Total Payment Amount, any such income Taxes shall be computed after reduction for any net operating loss carryforwards or other Tax attributes (including Tax credits) of Parent or its subsidiaries (owned prior to the Merger) as of the Closing Date that are available to the maximum extent permitted by law to offset such gain after taking into account any limits on the usability of such attributes, including under Section 382 of the Code, in each case, as reasonably determined by a nationally recognized tax advisor (and for the sake of clarity such income taxes shall be calculated without taking into account any net operating losses or other Tax attributes generated by Parent or its subsidiaries after the Closing Date or any Tax attributes of the Company, whether generated before or after the Closing Date), assuming for this purpose that (i) the only item of gross income of Parent and its subsidiaries is the Total Payment Amount (for the avoidance of doubt, assuming that the Total Payment Amount is taxable in the hands of Parent or its subsidiaries no later than the taxable year that includes the corresponding CVR Payment), and (ii) the net operating loss carryforwards or other Tax attributes (including Tax credits) of Parent or its subsidiaries shall only include any net operating loss carryforwards or other Tax attributes (including Tax credits) of Parent or its subsidiaries (owned prior to the Merger) existing as of immediately prior to the Merger for U.S. federal income tax purposes and applicable state and local income tax purposes;

(b) any reasonable and documented out-of-pocket expenses incurred by Parent or any of its Affiliates in respect of its performance of this Agreement following the Effective Time, losses incurred and paid by Parent or any of its Affiliates following the Effective Time arising out of any Legal Proceeding relating to or in connection with (i) an Asset Disposition, (ii) Parent's, Roche's or any of their respective Affiliates' obligations under the Roche Agreement or (iii) otherwise with respect to the Total Payment Amount; and

(c) any Liabilities that were ascertainable prior to or at the Effective Time which Parent reasonably and in good faith determines should have been, but were not, deducted from "Net Cash" (as defined in the Merger Agreement), in connection with the Closing of the Merger, to the extent that deduction of such Liabilities would have resulted in a change in the Exchange Ratio under the Merger Agreement were such amounts properly deducted;

provided that no Permitted Deductions shall be deducted to the extent they were otherwise deducted from the calculation of Net Cash (as defined in the Merger Agreement).

"***Permitted Transfer***" means a transfer of CVRs: (a) on death of a Holder by will or intestacy; (b) by instrument to an inter vivos or testamentary trust in which the CVRs are to be passed to beneficiaries upon the death of the trustee; (c) pursuant to a court order; (d) made by operation of law (including a consolidation or merger) or without consideration in connection with the dissolution, liquidation or termination of any corporation, limited liability company, partnership or other entity; (e) in the case of CVRs held in book-entry or other similar nominee form, from a nominee to a beneficial owner (through an intermediary if applicable) or from a nominee to another nominee for the same beneficial owner, to the extent allowable by DTC; (f) a transfer from a participant's account in a tax-qualified employee benefit plan to the participant or to such participant's account in a different tax-qualified employee benefit plan or to a tax-qualified individual retirement account for the benefit of such participant; (g) to Parent or its Affiliates for any or no consideration; or (h) as provided in Section 2.6.

"***Person***" means any natural person, corporation, limited liability company, trust, unincorporated association, partnership, joint venture or other entity.

"***Record Time***" has the meaning set forth in Section 2.3(e).

"***Rights Agent***" means the Rights Agent named in the Preamble, until a successor Rights Agent will have become such pursuant to the applicable provisions of this Agreement, and thereafter "Rights Agent" will mean such successor Rights Agent.

"***Roche***" means the collective reference to F. Hoffman-La Roche Ltd and Hoffmann La Roche Inc. or its successors or any of its or their respective Affiliates; provided, that neither Chugai Pharmaceutical Co., Ltd, a Japanese corporation ("***Chugai***") nor its subsidiaries (if any) shall be deemed as Affiliates of Roche unless Roche provides written notice to Parent of its desire to include Chugai or its respective subsidiaries (as applicable) as Affiliate(s) of Roche.

"***Roche Agreement***" means that certain Asset Purchase Agreement, dated as of July 15, 2022, by and among F. Hoffman-La Roche Ltd, Hoffmann La Roche Inc. and Parent.

"***Roche Payment Amount***" means the thirty million dollar ($30,000,000) milestone payment to be made by Roche to Parent upon the initiation of a phase III clinical study in diabetic macular disorder with the compound known as "EBI-031" during the CVR Term, as set forth in Section 11.1 of the Roche Agreement.

"***Third Party***" means any Person other than Parent, Rights Agent or their respective Affiliates.

"***Total Payment Amount***" means, as of any applicable time of determination, any Asset Disposition Proceeds plus any Roche Payment Amounts.

1.2 Rules of Construction. Except as otherwise explicitly specified to the contrary, (a) whenever the context requires, the singular number shall include the plural, and vice versa; (b) the masculine gender shall include the feminine gender and neuter genders, the feminine gender shall include the masculine and neuter genders, and the neuter genders shall include masculine and feminine genders; (c) the word "extent" in the phrase "to the extent" means the degree to which a subject or other thing extends, and does not simply mean "if"; (d) the word "including" (in its various forms) means "including without limitation"; (e) references to a "Section" means a Section of this Agreement unless another agreement is specified; (f) references to a particular statute or regulation include all rules and regulations thereunder and any predecessor or successor statute, rules or regulation, in each case as amended or otherwise modified from time to time; (g) words in the singular or plural form include the plural and singular form, respectively; (h) references to a particular Person include such Person's successors and assigns to the extent not prohibited by this Agreement; (i) the word "or" shall not be exclusive (i.e., "or" shall be deemed to mean "and/or") unless the subject of the conjunction are mutually exclusive; and (j) all references to dollars or "$" refer to United States dollars. For clarity, the parties agree that the phrase "materially adverse" when used in this Agreement with respect to the Holders includes any amendment or other action, as applicable, that does or would be reasonably expected to reduce, eliminate, or materially delay the Roche Payment Amount.

2. CONTINGENT VALUE RIGHTS

2.1 CVRs; Appointment of Rights Agent.

(a) Each Holder is entitled to one CVR in the form of a dividend for each share of Parent Common Stock held by such Holder as of the Record Time. The CVRs represent the rights of Holders to receive contingent cash payments pursuant to the Merger Agreement and this Agreement. The initial Holders will be the holders of Parent Common Stock as of immediately prior to the Effective Time, and a list of the initial Holders shall be furnished to the Rights Agent by or on behalf of Parent in accordance with Section 4.1 hereof.

(b) Parent hereby appoints the Rights Agent to act as rights agent for Parent as contemplated hereby in accordance with the express terms and conditions set forth in this Agreement (and no implied terms or conditions), and the Rights Agent hereby accepts such appointment.

(c) Parent intends to treat the issuance of the CVRs as a distribution of property by Parent to the holders of Parent Common Stock for U.S. federal income tax purposes. Consistent with such intended tax treatment, Parent will timely send Forms 1099-DIV to all Holders notifying them of the portion of the CVR value that is a nondividend distribution (or a dividend to the extent of Parent's earnings and profits) for U.S. federal income tax purposes, and take all necessary steps to file its tax returns and any information statements consistent with such tax treatment. Parent will determine, in consultation with and with the consent of the Parent Designee, the fair market value of the CVRs in connection with the issuance and Parent will utilize such fair market value for purposes of all tax reporting (including on Forms 1099-DIV) with respect to the CVR.

2.2 Nontransferable. The CVRs shall not be sold, assigned, transferred, pledged, encumbered or in any other manner transferred or disposed of, in whole or in part, other than through a Permitted Transfer. Any attempted sale, assignment, transfer, pledge, encumbrance, transfer or disposition, in whole or in part, that is not a Permitted Transfer will be void *ab initio* and of no effect.

2.3 No Certificate; Registration; Registration of Transfer; Change of Address.

(a) The CVRs will not be evidenced by a certificate or other instrument.

(b) The Rights Agent will create and keep a register (the "***CVR Register***") for the purpose of identifying the Holders and registering CVRs and transfers of CVRs as permitted herein. The CVR Register will be created, and CVRs will be distributed, pursuant to written instructions to the Rights Agent from Parent. The CVR Register will initially show one position for Cede & Co. representing all the CVRs provided to the holders of shares of Parent Common Stock held as of immediately prior to the Effective Time. The Rights Agent will have no responsibility whatsoever directly to the street name holders or DTC participants with respect to transfers of CVRs unless and until such CVRs are transferred into the name of such street name holders or DTC participants in accordance with Section 2.2 of this Agreement. With respect to any payments to be made under Section 2.4(a) below, the Rights Agent will accomplish the payment to any former street name holders of shares of Parent Common Stock by sending one lump-sum payment to DTC. The Rights Agent will have no responsibilities whatsoever with regard to the distribution of payments by DTC to such street name holders.

(c) Subject to the restrictions on transferability set forth in Section 2.2, every request made to transfer a CVR must be in writing and accompanied by a written instrument of transfer and other reasonably requested documentation in form reasonably satisfactory to the Rights Agent, duly executed by the Holder thereof or the Holder's attorney duly authorized in writing, personal representative or survivor and setting forth in reasonable detail the circumstances relating to the transfer. Upon receipt of such written notice, the Rights Agent will, subject to its reasonable determination that the transfer instrument is in proper form, notify Parent that it has received such written notice. Upon receipt of such notice from the Rights Agent, Parent shall determine whether the transfer otherwise complies with the other terms and conditions of this Agreement (including the provisions of Section 2.2), and if it determines that it does so comply, Parent shall instruct the Rights Agent in writing to register the transfer of the CVRs in the CVR Register and notify Parent of the same. No service charge shall be made for any registration of transfer of a CVR; however Parent and the Rights Agent may require payment of a sum sufficient to cover any stamp or other tax or governmental charge that is imposed in connection with any such registration of transfer. The Rights Agent shall have no duty or obligation to take any action under any section of this Agreement that requires the payment by a Holder of applicable taxes or charges unless and until the Rights Agent is satisfied that all such taxes or charges have been paid or will be paid. All duly transferred CVRs registered in the CVR Register will be the valid obligations of Parent and will entitle the transferee to the same benefits and rights under this Agreement as those held immediately prior to the transfer by the transferor. No transfer of a CVR will be valid until registered in the CVR Register.

(d) A Holder may make a written request to the Rights Agent to change such Holder's address of record in the CVR Register. The written request must be duly executed by the Holder. Upon receipt of such written request, the Rights Agent is hereby authorized to promptly record the change of address in the CVR Register.

(e) Parent will provide written instructions to the Rights Agent for the distribution of CVRs to holders of Parent Common Stock as of immediately prior to the Effective Time (the "***Record Time***"). Subject to the terms and conditions of this Agreement and Parent's prompt confirmation of the Effective Time, the Rights Agent shall effect the distribution of the CVRs, less any applicable tax withholding, to each holder of Parent Common Stock as of the Record Time by the mailing of a statement of holding reflecting such CVRs.

2.4 Payment Procedures.

(a) Within thirty (30) days after the receipt of any portion of the Total Payment Amount, Parent shall (i) deliver to the Rights Agent a certificate certifying to and specifying in reasonable detail (A) the amount of the applicable Total Payment Amount received by Parent or its Affiliates, (B) a calculation of the CVR Payment Amount and CVR Payment, and (C) the Permitted Deductions reflected in such CVR Payment Amount, (ii) deliver to the Rights Agent an amount equal to the aggregate CVR Payment Amount in immediately available funds (each, a "***CVR Payment***") and (iii) instruct the Rights Agent to deliver the CVR Payment to the Holders. The Rights Agent will promptly, and in any event within ten (10) Business Days after receipt of each applicable CVR Payment, pay to each Holder, by check mailed to the address of each Holder as reflected in the CVR Register as of the close of business on the date of the receipt of the CVR Payment statement, such Holder's CVR Payment Amount less any applicable tax withholding. Until such certificate, CVR Payment and instructions are received by the Rights Agent, the Rights Agent may presume conclusively for all purposes that such portion of the Total Payment Amount has not been received.

(b) All payments by Parent to the Rights Agent under this Agreement shall be made in U.S. dollars.

(c) Parent shall be entitled to deduct or withhold, or cause the Rights Agent to deduct or withhold from any CVR Payment Amount otherwise payable or otherwise deliverable pursuant to this Agreement, in each case directly or through an authorized payroll agent, such amounts as are reasonably determined to be required to be deducted or withheld therefrom under the Code or any other provision of any applicable federal, state, local or non-U.S. Tax Law as may be determined by Parent. To the extent such amounts are so deducted or withheld and paid over or deposited with the relevant Tax authority, such amounts shall be treated for all purposes under this Agreement as having been paid to the Holder(s) to whom such amounts would otherwise have been paid or delivered. Prior to making any such Tax withholdings or causing any such Tax withholdings to be made with respect to any Holder, Parent shall instruct the Rights Agent, to the extent practicable, to provide notice to the Holder of such potential withholding and a reasonable opportunity for the Holder to provide any necessary Tax forms (including an IRS Form W-9 or an applicable IRS Form W-8) in order to avoid or reduce such withholding amounts; provided, that the time period for payment of a CVR Payment Amount by the Rights Agent set forth in Section 2.4(a) shall be extended by a period equal to any delay caused by the Holder providing such forms; provided, further, that in no event shall such period be extended for more than ten (10) Business Days, unless otherwise requested by the Holder for the purpose of delivering such forms and agreed to by the Rights Agent.

(d) Any portion of any CVR Payment that remains undistributed to any Holder six (6) months after such CVR Payment is received by the Rights Agent from Parent, provided, that the Rights Agent has fully complied with Section 2.4(a), will be delivered by the Rights Agent to Parent, upon demand, and such Holder will thereafter look only to Parent for payment of its share of such returned CVR Payment, without interest.

(e) Neither Parent nor the Rights Agent will be liable to any person in respect of any CVR Payment Amount delivered to a public official pursuant to any applicable abandoned property, escheat or similar Law. If, despite Parent's and/or the Rights Agent's commercially reasonable efforts to deliver a CVR Payment Amount to the applicable Holder, such CVR Payment Amount has not been paid immediately prior to the date on which such CVR Payment Amount would otherwise escheat to or become the property of any Governmental Body, any such CVR Payment Amount will, to the extent permitted by applicable Law, become the property of Parent, free and clear of all claims or interest of any person previously entitled thereto. In addition to and not in limitation of any other indemnity obligation herein, Parent agrees to indemnify and hold harmless the Rights Agent with respect to any liability, penalty, cost or expense the Rights Agent may incur or be subject to in connection with transferring such property to Parent and such indemnification obligation shall survive the termination of this Agreement, the resignation, replacement or removal of the Rights Agent, and the payment, termination and the expiration of the CVRs.

2.5 No Voting, Dividends or Interest; No Equity or Ownership Interest in Parent.

(a) The CVRs will not have any voting or dividend rights, and interest will not accrue on any amounts payable on the CVRs to any Holder.

(b) The CVRs will not represent any equity or ownership interest in Parent or in any constituent company to the Merger. The sole right of the Holders to receive property hereunder is the right to receive the CVR Payment in accordance with the terms hereof. It is hereby acknowledged and agreed that a CVR shall not constitute a security of Parent or any constituent company to the Merger.

(c) Each Holder acknowledges and agrees that such Holder will not challenge or contest any action, inaction, determination or decision of Parent or the Rights Agent, except via written action of the Acting Holders, and will not threaten, bring, commence, institute, maintain, prosecute or voluntarily aid any action, which challenges the validity of or seeks to enjoin the operation of any provision of this Agreement.

2.6 Ability to Abandon CVR. A Holder may at any time, at such Holder's option, abandon all of such Holder's remaining rights in a CVR by transferring such CVR to Parent without consideration therefor, and such rights will be cancelled, with the Rights Agent being promptly notified in writing by Parent of such transfer and cancellation. Nothing in this Agreement is intended to prohibit Parent from offering to acquire CVRs, in a private transaction or otherwise, for consideration in its sole discretion.

3. THE RIGHTS AGENT

3.1 Certain Duties and Responsibilities. The Rights Agent will be authorized and protected and will not have any liability for or in respect of any actions taken, suffered or omitted to be taken by it in connection with its acceptance and administration of this Agreement and the exercise and performance of its duties hereunder, except to the extent of its own willful misconduct, bad faith or gross negligence (each as determined by a final non-appealable judgment of a court of competent jurisdiction).

3.2 Certain Rights of the Rights Agent. The Rights Agent undertakes to perform such duties and only such duties as are specifically set forth in this Agreement, and no implied duties, covenants or obligations will be read into this Agreement against the Rights Agent. The Rights Agent shall not assume any obligations or relationship of agency or trust with any Holder. In addition:

(a) the Rights Agent may rely and will be protected by Parent in acting or refraining from acting upon any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order or other paper or document believed by it in the absence of bad faith to be genuine and to have been signed or presented by the proper party or parties;

(b) whenever the Rights Agent will deem it desirable that a matter be proved or established prior to taking, suffering or omitting any action hereunder, the Rights Agent may request and rely upon an Officer's Certificate with respect to such matter, which certificate shall be full authorization and protection to the Rights Agent, and the Rights Agent shall, in the absence of gross negligence, bad faith or willful or intentional misconduct (each as determined by a final non appealable judgment of a court of competent jurisdiction) on its part, incur no liability and be held harmless by Parent for or in respect of any action taken, suffered or omitted to be taken by it in the absence of bad faith under the provisions of this Agreement in reliance upon such certificate;

(c) in the event the Rights Agent believes any ambiguity or uncertainty exists hereunder or in any notice, instruction, direction, request or other communication, paper or document received by the Rights Agent hereunder, the Rights Agent, may, in its sole discretion, refrain from taking any action, and shall be fully protected and shall not be liable in any way to Parent, any Holder or any other person or entity for refraining from taking such action, unless the Rights Agent receives written instructions from the Parent which eliminates such ambiguity or uncertainty to the satisfaction of the Rights Agent;

(d) the Rights Agent may engage and consult with counsel of its selection (who may be legal counsel for the Rights Agent or the Parent or an employee of the Rights Agent) and the written advice of such counsel or any opinion of counsel will be full and complete authorization and protection to the Rights Agent and the Rights Agent shall be held harmless by Parent and shall incur no liability for or in respect of any action taken, suffered or omitted by it hereunder in the absence of bad faith and in reliance thereon;

(e) the permissive rights of the Rights Agent to do things enumerated in this Agreement will not be construed as a duty;

(f) the Rights Agent will not be required to give any note or surety in respect of the execution of such powers or otherwise in respect of the premises;

(g) the Rights Agent shall not be liable for or by reason of, and shall be held harmless by Parent with respect to any of the statements of fact or recitals contained in this Agreement or be required to verify the same, but all such statements and recitals are and shall be deemed to have been made by the Parent only and the Rights Agent will have no liability and shall be held harmless by Parent in respect of the validity of this Agreement or the execution and delivery hereof (except the due execution and delivery hereof by the Rights Agent), nor shall the Rights Agent be responsible for any breach by Parent of any covenant or condition contained in this Agreement;

(h) Parent agrees to indemnify the Rights Agent for, and hold the Rights Agent harmless against, any loss, liability, damage, judgment, fine, penalty, settlement, claim, demands, suits, cost or expense (including without limitation, the reasonable and documented fees and expenses of legal counsel) for any action taken, suffered or omitted to be taken by the Rights Agent or arising out of or in connection with the Rights Agent's duties under this Agreement, including the reasonable and documented out-of-pocket costs and expenses of defending the Rights Agent against any claims, charges, demands, suits or loss arising therefrom, directly or indirectly, or enforcement of its rights hereunder, unless such loss has been determined by a final non-appealable judgment of a court of competent jurisdiction to be a result of the Rights Agent's gross negligence, bad faith or willful or intentional misconduct;

(i) anything to the contrary notwithstanding, (i) any liability of the Rights Agent under this Agreement will be limited to the aggregate amount of the annual fees (but not reimbursed expenses) paid by Parent to the Rights Agent under this Agreement during the twelve months immediately preceding the event for which recovery is sought, and (ii) in no event shall the Rights Agent be liable for any special, punitive, indirect, consequential or incidental loss or damage of any kind whatsoever (including but not limited to lost profits) arising out of any action taken, suffered or omitted to be taken by it, even if the Rights Agent has been advised of the likelihood of such loss or damage and regardless of the form of action;

(j) Parent agrees (i) to pay the fees and expenses of the Rights Agent in connection with the Rights Agent's duties under this Agreement as agreed upon in writing by the Rights Agent and Parent on or prior to the date hereof, and (ii) to reimburse the Rights Agent for all taxes and governmental charges, reasonable and documented out-of-pocket expenses and other charges of any kind and nature incurred by the Rights Agent in the preparation, delivery, amendment and execution of this Agreement and the exercise and performance of its duties hereunder (other than taxes imposed on or measured by the Rights Agent's net income and franchise or similar taxes imposed on it (in lieu of net income taxes)). The Rights Agent will also be entitled to reimbursement from Parent for all reasonable and documented out-of-pocket expenses paid or incurred by it in connection with the administration by the Rights Agent of its duties hereunder.

(k) the Rights Agent shall not be deemed to have knowledge of any event of which it was supposed to receive notice thereof hereunder, and the Rights Agent shall be fully protected and shall incur no liability for failing to take action in connection therewith, unless and until it has received such notice in writing from the Parent and all notices or other instruments required by this Agreement to be delivered to the Rights Agent must, in order to be effective, be received by the Rights Agent as specified herein, and in the absence of such notice so delivered the Rights Agent may conclusively assume no such event or condition exists;

(l) the Rights Agent and any shareholder, affiliate, director, officer or employee of the Rights Agent may buy, sell or deal in any securities of the Parent or become peculiarly interested in any transaction in which the Parent may be interested, or contract with or lend money to the Parent or otherwise act as fully and freely as though it were not the Rights Agent under this Agreement. Nothing herein shall preclude the Rights Agent from acting in any other capacity for the Parent or for any other Person;

(m) the Rights Agent may execute and exercise any of the rights or powers hereby vested in it or perform any duty hereunder either itself or by or through its attorneys or agents, and the Rights Agent shall not be liable, answerable or accountable for any act, omission, default, neglect or misconduct of any such attorneys or agents or for any loss to the Parent, any Holder or any other person or entity resulting from any such act, omission, default, neglect or misconduct, absent gross negligence, bad faith or willful misconduct (each as determined by a final non-appealable judgment of a court of competent jurisdiction) in the selection and continued employment thereof;

(n) no provision of this Agreement shall require the Rights Agent to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder or in the exercise of its rights if there shall be reasonable grounds for believing that repayment of such funds or adequate indemnification against such risk or liability is not reasonably assured to it;

(o) the Rights Agent shall not have any duty or responsibility in the case of the receipt of any written demand from any Holder with respect to any action or default by the Parent or its Affiliates, including, without limiting the generality of the foregoing, any duty or responsibility to initiate or attempt to initiate any proceedings at law or otherwise or to make any demand upon the Parent;

(p) the Rights Agent shall neither be responsible for, nor chargeable with, knowledge of, nor have any requirements to comply with, the terms and conditions of any other agreement, instrument or document, including, without limitation, the Merger Agreement, nor shall the Rights Agent be required to determine if any person or entity has complied with any such agreements, instruments or documents, nor shall any additional obligations of the Rights Agent be inferred from the terms of such agreements, instruments or documents even though reference thereto may be made in this Agreement. In the event of any conflict between the terms and provisions of this Agreement and those of any other agreement, instrument or document, including but not limited to the Merger Agreement, the terms and conditions of this Agreement shall control as they relate to the Rights Agent; and

(q) The provisions of Section 3.1 and this Section 3.2 shall survive the termination of this Agreement, the resignation, replacement or removal of the Rights Agent, and the payment, termination and the expiration of the CVRs.

3.3 Resignation and Removal; Appointment of Successor.

(a) The Rights Agent may resign at any time by giving written notice thereof to Parent specifying a date when such resignation will take effect, which notice will be sent at least thirty (30) days prior to the date so specified, and such resignation will become effective on the earlier of (i) the date so specified and (ii) the appointment of a successor Rights Agent. Parent has the right to remove the Rights Agent at any time by a Board Resolution specifying a date when such removal will take effect (or, if earlier, the appointment of the successor Rights Agent). Notice of such removal will be given by Parent to the Rights Agent, which notice will be sent at least thirty (30) days prior to the date so specified. Notwithstanding anything to the contrary contained herein, such replacement or removal of the Rights Agent shall not affect any of the provisions of this Agreement that expressly survive the termination of this Agreement, or the resignation, replacement or removal of the Rights Agent.

(b) If the Rights Agent provides notice of its intent to resign, is removed or becomes incapable of acting, Parent, by a Board Resolution, will as soon as is reasonably possible appoint a qualified successor Rights Agent, who shall be a stock transfer agent or national reputation or the corporate trust department of a commercial bank. The successor Rights Agent so appointed will, forthwith upon its acceptance of such appointment in accordance with Section 3.4, become the successor Rights Agent. Notwithstanding the foregoing, if Parent shall fail to make such appointment within a period of thirty (30) days after giving notice of such removal or after it has been notified in writing of such resignation or incapacity by the resigning or incapacitated Rights Agent, then the incumbent Rights Agent may apply to any court of competent jurisdiction for the appointment of a new Rights Agent.

(c) Parent will give notice to each Holder of each resignation and each removal of a Rights Agent and each appointment of a successor Rights Agent by delivering a written notice of such event to the Holders as their names and addresses appear in the CVR Register in accordance with Section 7.1. Each notice will include the name and address of the successor Rights Agent. If Parent fails to send such notice within ten (10) Business Days after acceptance of appointment by a successor Rights Agent, the successor Rights Agent will cause the notice to be mailed at the expense of Parent. Failure to give any notice provided for in this Section 3.3, however, and any defect therein, shall not affect the legality or validity of the resignation or removal of the Rights Agent or the appointment of the successor Rights Agent, as the case may be.

(d) Notwithstanding anything to the contrary in this Section 3.3, unless consented to in writing by, at the applicable time of determination, Holders of at least 33% of the then outstanding CVRs, as set forth in the CVR Register (the "***Acting Holders***"), Parent will not appoint as a successor Rights Agent any Person that is not a stock transfer agent of national reputation or the corporate trust department of a commercial bank.

(e) The Rights Agent will reasonably cooperate with Parent and any successor Rights Agent in connection with the transition of the duties and responsibilities of the Rights Agent to the successor Rights Agent, including the transfer of all relevant data, including the CVR Register, to the successor Rights Agent, but such predecessor Rights Agent shall not be required to make any additional expenditure or assume any additional liability in connection with the foregoing.

3.4 Acceptance of Appointment by Successor. Every successor Rights Agent appointed hereunder will, at or prior to such appointment, execute, acknowledge and deliver to Parent and to the retiring Rights Agent an instrument accepting such appointment and a counterpart of this Agreement, and thereupon such successor Rights Agent, without any further act, deed or conveyance, will become vested with all the rights, powers, trusts and duties of the retiring Rights Agent. On request of Parent or the successor Rights Agent, the retiring Rights Agent will execute and deliver an instrument transferring to the successor Rights Agent all the rights (except such rights of the predecessor Rights Agent which survive pursuant to Section 3.3 of this Agreement), powers and trusts of the retiring Rights Agent.

4. COVENANTS

4.1 List of Holders. Parent will furnish or cause to be furnished to the Rights Agent in such form as Parent receives from Parent's transfer agent (or other agent performing similar services for Parent), the names and addresses of the Holders within ten (10) Business Days of the Effective Time. Until such initial list of Holders is furnished to the Rights Agent, the Rights Agent shall have no duties, responsibilities or obligations with respect to such Holders.

4.2 Payment of CVR Payment Amounts. If a CVR Payment is due under Section 2.4(a), Parent will deposit the CVR Payment with the Rights Agent for payment to the Holders in accordance with Section 2.4(a).

4.3 Roche Agreements. Without the prior written consent of the Acting Holders, neither Parent nor any of its Affiliates shall (a) amend, restate, supplement, terminate or otherwise modify the Roche Agreement in a manner materially adversely affecting the Holders' rights under this Agreement, (b) in the event that Roche fails to make a payment of a Roche Payment at the time rightfully due and payable, take action with respect to, or unreasonably waive or fail to enforce, the right to receive the applicable payments which are rightfully due and payable under the Roche Agreement, in a manner materially adversely affecting the Holders' rights under this Agreement or (c) agree to any of the foregoing. Without limiting the foregoing, Parent and its Affiliates shall pursue their rights under the Roche Agreement in good faith, and not take any action (or fail to take any action) with the intention of avoiding, reducing or materially delaying any payment to the Holders hereunder.

4.4 Records. Parent shall, and shall cause its Affiliates to, keep true, complete and accurate records in sufficient detail to enable the Holders and their consultants or professional advisors to confirm (a) whether the Roche Payment Amount or the Asset Disposition Proceeds have been received by Parent or its successors or Affiliates and (b) the applicable CVR Payment Amount payable to each Holder hereunder in accordance with the terms specified in this Agreement.

5. DISPOSITION

5.1 During the period beginning on the date hereof and ending on December 31, 2023, Parent will, and will cause its subsidiaries to, use commercially reasonable efforts to effectuate a Disposition, including the negotiation and execution of a Sale Agreement and completion of the transactions contemplated thereby. Further, Parent will not take any actions for the primary purpose of frustrating the payment of CVR Payments.

5.2 The Holders acknowledge and agree that, except as expressly set forth in the foregoing Section 5.1, (a) Parent has a fiduciary obligation to operate its business in the best interests of its stockholders, and any potential obligation to pay any potential CVR Payments will not create any express or implied obligation to operate its business in any particular manner in order to maximize any such CVR Payments, (b) the Holders are not relying on any representation of Parent or any other Person with regard to any Asset Disposition or other action involving Potentially Transferable Assets, including CVR Sale Assets, following the Closing, and neither Parent nor any other Person has provided, or can provide, any assurance to the Holders that any potential CVR Payments will in fact be earned and paid, and (c) none of Parent or any of its Subsidiaries, officers or directors shall have any obligation or liability whatsoever to any Person relating to or in connection with any action, or failure to act, with respect to the sale of Potentially Transferrable Assets, including CVR Sale Assets.

6. AMENDMENTS

6.1 Amendments without Consent of Holders.

(a) Without the consent of any Holders, Parent, when authorized by a Board Resolution, at any time and from time to time, and the Rights Agent may enter into one or more amendments hereto, solely to evidence any successor to or permitted Assignee of Parent and the assumption by any such successor or permitted Assignee of the covenants of Parent herein as provided in Section 7.3.

(b) Without the consent of any Holders, Parent, when authorized by a Board Resolution, may, with the consent of the Rights Agent, which consent shall not be unreasonably withheld, conditioned or delayed, at any time and from time to time, enter into one or more amendments hereto, solely for any of the following purposes:

(i) to evidence the succession of another Person as a successor Rights Agent in accordance with Section 3 and the assumption by any successor of the covenants and obligations of the Rights Agent herein;

(ii) to add to the covenants of Parent such further covenants, restrictions, conditions or provisions as Parent shall consider to be for the protection of the Holders; provided, that, in each case, such provisions do not adversely affect the interests of the Holders;

(iii) to cure any ambiguity, to correct or supplement any provision herein that may be defective or inconsistent with any other provision herein, or to make any other provisions with respect to matters or questions arising under this Agreement; provided, that, in each case, such provisions do not adversely affect the interests of the Holders;

(iv) as may be necessary or appropriate to ensure that the CVRs are not subject to registration under the Securities Act or the Exchange Act or any applicable state securities or "blue sky" laws; provided, that, in each case, such provisions do not adversely affect the interests of the Holders;

(v) to cancel any CVRs (A) in the event that any Holder has abandoned its rights in accordance with Section 2.6, or (B) following a transfer of such CVRs to Parent or its Affiliates in accordance with Section 2.2 or Section 2.3;

(vi) any other amendments hereto for the purpose of adding, eliminating or changing any provisions of this Agreement, unless such addition, elimination or change is adverse to the interests of the Holders; or

(vii) as may be necessary or appropriate to ensure that Parent complies with applicable Law.

(c) Promptly after the execution by Parent and the Rights Agent of any amendment pursuant to the provisions of this Section 6.1, Parent will transmit a notice thereof in accordance with Section 7.1 to the Holders at their addresses as they appear on the CVR Register, setting forth in general terms the substance of such amendment.

6.2 Amendments with Consent of Holders.

(a) Subject to Section 6.1 (which amendments pursuant to Section 6.1 may be made without the consent of the Holders), with the consent of the Acting Holders, whether evidenced in writing or taken at a meeting of such Holders, Parent, when authorized by a Board Resolution, and the Rights Agent may enter into one or more amendments hereto for the purpose of adding, eliminating or changing any provisions of this Agreement, even if such addition, elimination or change is materially adverse to the interest of the Holders.

(b) Promptly after the execution by Parent, and the Rights Agent of any amendment pursuant to the provisions of this Section 6.2, Parent will transmit (or cause the Rights Agent to transmit) a notice thereof in accordance with Section 7.1 to the Holders at their addresses as they appear on the CVR Register, setting forth in general terms the substance of such amendment.

6.3 Execution of Amendments. In executing any amendment permitted by this Section 6, the Rights Agent will be entitled to receive, and will be fully protected in relying upon, an opinion of counsel selected by Parent stating that the execution of such amendment is authorized or permitted by this Agreement. Notwithstanding anything contained herein, the Rights Agent may, but is not obligated to, enter into any such amendment that affects the Rights Agent's own rights, privileges, covenants or duties under this Agreement or otherwise. No supplement or amendment to this Agreement shall be effective unless duly executed by the Rights Agent.

6.4 Effect of Amendments. Upon the execution of any amendment under this Section 6, this Agreement will be modified in accordance therewith, such amendment will form a part of this Agreement for all purposes and every Holder will be bound thereby.

7. OTHER PROVISIONS OF GENERAL APPLICATION

7.1 Notices to Rights Agent and Parent. Any notice or other communication required or permitted hereunder shall be in writing and shall be deemed given when delivered and received hereunder (a) one Business Day after being sent for next Business Day delivery, fee prepared, via a reputable international overnight courier service, (b) upon delivery in the case of delivery by hand, or (c) on the date delivered in the place of delivery if sent by email (with a written or electronic confirmation of delivery) prior to 5:00 p.m. New York time, otherwise on the next succeeding Business Day, in each case to the intended recipient as set forth below:

If to the Rights Agent, to it at:

Computershare Inc. and Computershare Trust Company, N.A.
150 Royall Street, 2nd Floor
Canton, MA 02021
Attention: Relationship Manager

If to Parent, to it at:

Sesen Bio, Inc.
Email: [* * *]
Attention: Mark Sullivan

with a copy to:

Hogan Lovells US LLP
Email: Steve.abrams@hoganlovells.com; Jessica.bisignano@hoganlovells.com
Attention: Steve Abrams; Jessica Bisignano

The Rights Agent or Parent may specify a different address, email address by giving notice to each other in accordance with this Section 7.1 and to the Holders in accordance with Section 7.2.

7.2 Notice to Holders. Where this Agreement provides for notice to Holders, such notice will be sufficiently given (unless otherwise herein expressly provided) if in writing and mailed, first-class postage prepaid or, if applicable, transmitted through the facilities of DTC in accordance with DTC's procedures, to each Holder affected by such event, at the Holder's address as it appears in the CVR Register, not later than the latest date, and not earlier than the earliest date, if any, prescribed for the giving of such notice. In any case where notice to Holders is given by mail, neither the failure to mail such notice, nor any defect in any notice so mailed, to any particular Holder will affect the sufficiency of such notice with respect to other Holders.

7.3 Parent Successors and Assigns.

(a) Parent may not assign this Agreement without the prior written consent of the Acting Holders. Notwithstanding the foregoing (i) Parent may assign, in its sole discretion and without the consent of any other party, any or all of its rights, interests and obligations hereunder to one or more direct or indirect wholly-owned subsidiaries of Parent for so long as they remain wholly-owned subsidiaries of Parent (each, an "***Assignee***") and the Assignee agrees to assume and be bound by all of the terms of this Agreement; provided, however, that in connection with any assignment to an Assignee, Parent shall, and shall agree to, remain liable for the performance by such Assignee of all obligations of Parent hereunder, with such Assignee substituted for Parent under this Agreement, and (ii) Parent may assign this Agreement in its entirety without the consent of any other party to its successor in interest in connection with the sale of all or substantially all of its assets or of its stock, or in connection with a merger, acquisition or similar transaction (such successor in interest, the "***Acquiror***", and such transaction, the "***Acquisition***"). This Agreement will be binding upon, inure to the benefit of and be enforceable by Parent's successors, acquirers and each Assignee. Each reference to "***Parent***" in this Agreement shall be deemed to include Parent's successors, acquirers and all Assignees. Each of Parent's successors, acquirers and assigns shall expressly assume by an instrument supplemental hereto, executed and delivered to the Rights Agent, the due and punctual payment of the CVR Payments and the due and punctual performance and observance of all of the covenants and obligations of this Agreement to be performed or observed by Parent. Notwithstanding anything to the contrary contained herein, no assignment pursuant to this Section 7.3 shall relieve Parent of its obligations and liabilities to the Rights Agent hereunder, unless specifically agreed to in writing by the Rights Agent.

(b) Any Person into which the Rights Agent or any successor Rights Agent may be merged or with which it may be consolidated, or any Person resulting from any merger or consolidation to which the Rights Agent or any successor Rights Agent shall be a party, or any Person succeeding to the stock transfer or other shareholder services business of the Rights Agent or any successor Rights Agent, shall be the successor to the Rights Agent under this Agreement without the execution or filing of any paper or any further act on the part of any of the parties hereto; provided, that such Person would be eligible for appointment as a successor Rights Agent under the provisions of this Agreement. The purchase of all or substantially all of the Rights Agent's assets employed in the performance of transfer agent activities shall be deemed a merger or consolidation for purposes of this Section 7.3(b).

7.4 Benefits of Agreement; Action by Acting Holders. The holders shall be intended third-party beneficiaries hereof and shall be entitled to, solely by action by the written consent of the Acting Holders, specifically enforce the terms hereof; provided that under no circumstances shall the rights of Holders as third-party beneficiaries pursuant to this Section 7.4 be enforceable by such Holders or any other Person acting for or on their behalf other than through the action of the Acting Holders, which Acting Holders shall have the sole power and authority to act on behalf of the Holders in enforcing any of their rights hereunder. Nothing in this Agreement, express or implied, will give to any Person (other than the Rights Agent, Parent, Parent's successors and permitted assignees, and the Holders and their respective successors and permitted assignees) any benefit or any legal or equitable right, remedy or claim under this Agreement or under any covenant or provision herein contained, all such covenants and provisions being for the sole benefit of the Rights Agent, Parent, Parent's successors and permitted Assignees, and the Holders and their respective successors and permitted assignees. The rights of Holders are limited to those expressly provided in this Agreement and the Merger Agreement. Except for the rights of the Rights Agent set forth herein, the Acting Holders will have the sole right, on behalf of all Holders, by virtue of or under any provision of this Agreement, to institute any action or proceeding at law or in equity with respect to this Agreement, and no individual Holder or other group of Holders will be entitled to exercise such rights.

7.5 Governing Law. This Agreement, the CVRs and all claims and causes of action based upon, arising out of or in connection herewith shall be governed by, and construed in accordance with, the Laws of the State of Delaware, without regard to Laws that may be applicable under conflicts of laws principles (whether of the State of Delaware or any other jurisdiction) that would cause the application of the Laws of any jurisdiction other than the State of Delaware.

In any Legal Proceeding between any of the parties arising out of our relating to this Agreement, each of the parties hereby (i) irrevocably and unconditionally consent and submits, for itself and its property, to the exclusive jurisdiction and venue of the Court of Chancery of the State of Delaware, New Castle County, or, if such court does not have jurisdiction, the United States District Court for the District of Delaware or, to the extent that neither of the foregoing courts has jurisdiction, the Superior Court of the State of Delaware, (ii) agrees that any claim in respect of any such Legal Proceeding shall be heard and determined exclusively in accordance with clause (i) of this Section 7.5, (iii) waives, to the fullest extent it may legally and effectively do so, any objection which it may now or hereafter have to the laying of venue of any such Legal Proceeding in any such court, (iv) waives, to the fullest extent permitted by Law, any objection that such courts are an inconvenient forum or do not have jurisdiction over any party, and (v) agrees that service of process upon such party in any such Legal Proceeding shall be effective if notice is given in accordance with Section 7.1 of this Agreement. Nothing in this Section 7.5, however, shall affect the right of any Person to serve legal process in any manner permitted by Law.

7.6 Severability. Any term or provision of this Agreement that is invalid or unenforceable in any situation in any jurisdiction shall not affect the validity or enforceability of the remaining terms and provisions of this Agreement or the validity or enforceability of the offending term or provision in any other situation or in any other jurisdiction. If any term or other provision of this Agreement is determined by a final judgement of a court of competent jurisdiction to be invalid or unenforceable, the parties agree that the court making such determination shall have the power to limit such term or provisions, to delete specific words or phrases or to replace such term or provision with a term or provision that is valid and enforceable and that comes closest to expressing the intention of the invalid or unenforceable term or provision, and this Agreement shall be valid and enforceable as so modified. Notwithstanding anything to the contrary herein, if any such excluded provision shall affect the rights, immunities, liabilities, duties or obligations of the Rights Agent, the Rights Agent shall be entitled to resign immediately upon written notice to Parent. In the event such court does not exercise the power granted to it in the prior sentence, the parties agree to replace such invalid or unenforceable term or provision with a valid and enforceable term or provision that will achieve, to the extent possible, the economic, business or other purposes of such invalid or unenforceable term or provision.

7.7 Counterparts and Signature. This Agreement may be signed in any number of counterparts, including by electronic transmission, each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument.

7.8 Termination. This Agreement will expire and be of no force or effect, the parties hereto will have no liability hereunder (other than with respect to monies due and owing by Parent to the Rights Agent or any other rights of the Rights Agent which expressly survive the termination of this Agreement), and no additional payments will be required to be made, upon the later of (i) the conclusion of the CVR Term, and (ii) the payment of the full amount of all CVR Payments made to Parent on or prior to the end of the applicable CVR Term to the Rights Agent and the payment of the full amount of all CVR Payment Amounts to the Holders by the mailing by the Rights Agent of each applicable CVR Payment Amount to each Holder at the address reflected in the CVR Register.

7.9 Funds. All funds received by the Rights Agent under this Agreement that are to be distributed or applied by Computershare in the performance of services hereunder (the "***Funds***") shall be held by Computershare as agent for Parent and deposited in one or more bank accounts to be maintained by Computershare in its name as agent for Parent. Until paid pursuant to the terms of this Agreement, Computershare will hold the Funds through such accounts in: deposit accounts of commercial banks with Tier 1 capital exceeding $1 billion or with an average rating above investment grade by S&P (LT Local Issuer Credit Rating), Moody's (Long Term Rating) and Fitch Ratings, Inc. (LT Issuer Default Rating) (each as reported by Bloomberg Finance L.P.). The Rights Agent shall have no responsibility or liability for any diminution of the Funds that may result from any deposit made by the Rights Agent in accordance with this paragraph, including any losses resulting from a default by any bank, financial institution or other Third Party. The Rights Agent may from time to time receive interest, dividends or other earnings in connection with such deposits. The Rights Agent shall not be obligated to pay such interest, dividends or earnings to Parent, any Holder or any other party.

7.10 Entire Agreement. As between Parent and the Holders, this Agreement and the Merger Agreement (including the schedules, annexes and exhibits thereto, the documents and instruments referred to therein and the documents delivered pursuant thereto) constitute the entire agreement of Parent and the Holders and supersede all prior agreements and undertakings, both written and oral, among Parent and the Holders, or any of them, with respect to the subject matter hereof and, except as otherwise expressly provided herein or therein, are not intended to confer upon any other Person any rights or remedies hereunder or thereunder. As between Parent and the Rights Agent, this Agreement (including the documents and instruments referred to herein (other than the Merger Agreement) and the documents delivered pursuant thereto) contains the entire understanding of the parties with reference to the transactions and matters contemplated hereby and thereby and supersedes all prior agreements, written or oral, among the parties with respect thereto. If and to the extent that any provision of this Agreement is inconsistent or conflicts with the Merger Agreement, this Agreement will govern and control.

7.11 Waiver of Jury Trial. EACH PARTY HEREBY WAIVES, TO THE FULLEST EXTENT PERMITTED BY LAW, ANY RIGHT TO TRIAL BY JURY OF ANY CLAIM, DEMAND, ACTION, OR CAUSE OF ACTION (i) ARISING UNDER THIS AGREEMENT OR (ii) IN ANY WAY CONNECTED WITH OR RELATED OR INCIDENTAL TO THE DEALINGS OF THE PARTIES HERETO IN RESPECT OF THIS AGREEMENT OR ANY OF THE TRANSACTIONS CONTEMPLATED HEREBY, IN EACH CASE WHETHER NOW EXISTING OR HEREAFTER ARISING, AND WHETHER IN CONTRACT, TORT, EQUITY, OR OTHERWISE. EACH PARTY HEREBY AGREES AND CONSENTS THAT ANY SUCH CLAIM, DEMAND, ACTION, OR CAUSE OF ACTION SHALL BE DECIDED BY COURT TRIAL WITHOUT A JURY AND THAT THE PARTIES TO THIS AGREEMENT MAY FILE AN ORIGINAL COUNTERPART OF A COPY OF THIS AGREEMENT WITH ANY COURT AS WRITTEN EVIDENCE OF THE CONSENT OF THE PARTIES HERETO TO THE WAIVER OF THEIR RIGHT TO TRIAL BY JURY.

[*Remainder of page intentionally left blank*]

IN WITNESS WHEREOF, each of the parties has caused this Agreement to be executed on its behalf by its duly authorized officers as of the day and year first above written.

SESEN BIO, INC.

By: /s/ Thomas Cannell
Name: Thomas Cannell, D.V.M.
Title: President and Chief Executive Officer

COMPUTERSHARE INC. and COMPUTERSHARE TRUST COMPANY, N.A., jointly as RIGHTS AGENT

By: /s/ Collin Ekeogu
Name: Collin Ekeogu
Title: Manager, Corporate Actions

Exhibit 10.6

INDEMNIFICATION AGREEMENT

This Indemnification Agreement ("Agreement") is made as of [ ], 20[ ] by and between Carisma Therapeutics Inc., a Delaware corporation (the "Company"), and [ ] ("Indemnitee"). This Agreement supersedes and replaces any and all previous agreements between the Company and Indemnitee covering the subject matter of this Agreement.

RECITALS

WHEREAS, the Board of Directors of the Company (the "Board") believes that highly competent persons have become more reluctant to serve publicly-held corporations as directors, officers or in other capacities unless they are provided with adequate protection through insurance or adequate indemnification against inordinate risks of claims and actions against them arising out of their service to and activities on behalf of the corporation;

WHEREAS, the Board has determined that, in order to attract and retain qualified individuals, the Company will attempt to maintain on an ongoing basis, at its sole expense, liability insurance to protect persons serving the Company and its subsidiaries from certain liabilities. Although the furnishing of such insurance has been a customary and widespread practice among United States-based corporations and other business enterprises, the Company believes that, given current market conditions and trends, such insurance may be available to it in the future only at higher premiums and with more exclusions. At the same time, directors, officers, and other persons in service to corporations or business enterprises are being increasingly subjected to expensive and time-consuming litigation relating to, among other things, matters that traditionally would have been brought only against the Company or business enterprise itself. The Certificate of Incorporation of the Company (as the same may be amended from time to time, the "Certificate of Incorporation") requires indemnification of the officers and directors of the Company. Indemnitee may also be entitled to indemnification pursuant to the General Corporation Law of the State of Delaware (the "DGCL"). The Certificate of Incorporation and the DGCL expressly provide that the indemnification provisions set forth therein are not exclusive, and thereby contemplate that contracts may be entered into between the Company and members of the Board, officers and other persons with respect to indemnification;

WHEREAS, the uncertainties relating to such insurance and to indemnification have increased the difficulty of attracting and retaining such persons;

WHEREAS, the Board has determined that the increased difficulty in attracting and retaining such persons is detrimental to the best interests of the Company and its stockholders and that the Company should act to assure such persons that there will be increased certainty of such protection in the future;

WHEREAS, it is reasonable, prudent and necessary for the Company contractually to obligate itself to indemnify, and to advance expenses on behalf of, such persons to the fullest extent permitted by applicable law so that they will serve or continue to serve the Company free from undue concern that they will not be so indemnified;

WHEREAS, this Agreement is a supplement to and in furtherance of the Certificate of Incorporation and any resolutions adopted pursuant thereto, as well as any rights of Indemnitee under any directors' and officers' liability insurance policy, and this Agreement shall not be deemed a substitute therefor, nor to diminish or abrogate any rights of Indemnitee thereunder; [and]

WHEREAS, Indemnitee does not regard the protection available under the Certificate of Incorporation and insurance as adequate in the present circumstances, and may not be willing to serve or continue to serve as an officer or director without adequate protection, and the Company desires Indemnitee to serve or continue to serve in such capacity. Indemnitee is willing to serve, continue to serve and to take on additional service for or on behalf of the Company on the condition that Indemnitee be so indemnified[; and][.]

[WHEREAS, Indemnitee is a representative of [ ] [and its affiliated investment funds] (the "Fund"), and has certain rights to indemnification and/or insurance provided by the Fund which Indemnitee and the Fund intend to be secondary to the primary obligation of the Company to indemnify Indemnitee as provided herein, with the Company's acknowledgement and agreement to the foregoing being a material condition to Indemnitee's willingness to serve on the Board.]

NOW, THEREFORE, in consideration of the premises and the covenants contained herein, the Company and Indemnitee do hereby covenant and agree as follows:

Section 1. Services to the Company. Indemnitee agrees to serve as a[n] [director] [officer] of the Company. Indemnitee may at any time and for any reason resign from such position (subject to any other contractual obligation or any obligation imposed by operation of law), in which event the Company shall have no obligation under this Agreement to continue Indemnitee in such position. This Agreement shall not be deemed an employment contract between the Company (or any of its subsidiaries or any Enterprise) and Indemnitee. Indemnitee specifically acknowledges that Indemnitee's employment with the Company (or any of its subsidiaries or any Enterprise), if any, is at will, and Indemnitee may be discharged at any time for any reason, with or without cause, except as may be otherwise provided in any written employment contract between Indemnitee and the Company (or any of its subsidiaries or any Enterprise), other applicable formal severance policies duly adopted by the Board, or, with respect to service as a director or officer of the Company, by the Certificate of Incorporation, the Bylaws of the Company (the "Bylaws"), and the DGCL. The foregoing notwithstanding, this Agreement shall continue in force after Indemnitee has ceased to serve as a[n] [director] [officer] of the Company, as provided in Section 16 hereof.

Section 2. Definitions. As used in this Agreement:

(a) References to "agent" shall mean any person who is or was a director, officer, or employee of the Company or a subsidiary of the Company or other person authorized by the Company to act for the Company, to include such person serving in such capacity as a director, officer, employee, fiduciary or other official of another corporation, partnership, limited liability company, joint venture, trust or other enterprise at the request of, for the convenience of, or to represent the interests of the Company or a subsidiary of the Company.

(b) A "Change in Control" shall be deemed to occur upon the earliest to occur after the date of this Agreement of any of the following events:

i. Acquisition of Stock by Third Party. Any Person (as defined below) is or becomes the Beneficial Owner (as defined below), directly or indirectly, of securities of the Company representing fifty percent (50%) or more of the combined voting power of the Company's then outstanding securities unless the change in relative Beneficial Ownership of the Company's securities by any Person results solely from a reduction in the aggregate number of outstanding shares of securities entitled to vote generally in the election of directors;

ii. Change in Board of Directors. During any period of two (2) consecutive years (not including any period prior to the execution of this Agreement), individuals who at the beginning of such period constitute the Board, and any new director (other than a director designated by a person who has entered into an agreement with the Company to effect a transaction described in Sections 2(b)(i), 2(b)(iii) or 2(b)(iv)) whose election by the Board or nomination for election by the Company's stockholders was approved by a vote of at least two-thirds of the directors then still in office who either were directors at the beginning of the period or whose election or nomination for election was previously so approved, cease for any reason to constitute at least a majority of the members of the Board;

iii. Corporate Transactions. The effective date of a merger or consolidation of the Company with any other entity, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior to such merger or consolidation continuing to represent (either by remaining outstanding or by being converted into voting securities of the Surviving Entity) more than fifty-one percent (51%) of the combined voting power of the voting securities of the Surviving Entity outstanding immediately after such merger or consolidation and with the power to elect at least a majority of the board of directors or other governing body of such Surviving Entity;

iv. Liquidation or Sale of Assets. The approval by the stockholders of the Company of a complete liquidation of the Company or an agreement for the sale or disposition by the Company of all or substantially all of the Company's assets; and

v. Other Events. There occurs any other event of a nature that would be required to be reported in response to Item 6(e) of Schedule 14A of Regulation 14A (or a response to any similar item on any similar schedule or form) promulgated under the Exchange Act (as defined below), whether or not the Company is then subject to such reporting requirement.

For purposes of this Section 2(b), the following terms shall have the following meanings:

(A) "Exchange Act" shall mean the Securities Exchange Act of 1934, as amended from time to time.

(B) "Person" shall have the meaning as set forth in Sections 13(d) and 14(d) of the Exchange Act; provided, however, that Person shall exclude (i) the Company, (ii) any trustee or other fiduciary holding securities under an employee benefit plan of the Company, and (iii) any entity owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their ownership of stock of the Company.

(C) "Beneficial Owner" shall have the meaning given to such term in Rule 13d-3 under the Exchange Act; provided, however, that Beneficial Owner shall exclude any Person otherwise becoming a Beneficial Owner by reason of the stockholders of the Company approving a merger of the Company with another entity.

(D) "Surviving Entity" shall mean the surviving entity in a merger or consolidation or any entity that controls, directly or indirectly, such surviving entity.

(c) "Corporate Status" describes the status of a person who is or was a director, trustee, partner, managing member, officer, employee, agent or fiduciary of the Company or of any other corporation, limited liability company, partnership or joint venture, trust or other enterprise which such person is or was serving at the request of the Company.

(d) "Disinterested Director" shall mean a director of the Company who is not and was not a party to the Proceeding in respect of which indemnification is sought by Indemnitee.

(e) "Enterprise" shall mean the Company and any other corporation, limited liability company, partnership, joint venture, trust or other enterprise of which Indemnitee is or was serving at the request of the Company as a director, officer, trustee, partner, managing member, employee, agent or fiduciary.

(f) "Expenses" shall include all reasonable attorneys' fees, retainers, court costs, transcript costs, fees and other costs of experts and other professionals, witness fees, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, any federal, state, local or foreign taxes imposed on Indemnitee as a result of the actual or deemed receipt of any payments under this Agreement, ERISA excise taxes and penalties, and all other disbursements, obligations or expenses of the types customarily incurred in connection with, or as a result of, prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a deponent or witness in, or otherwise participating in, a Proceeding. Expenses also shall include (i) Expenses incurred in connection with any appeal resulting from any Proceeding, including without limitation the premium, security for, and other costs relating to any cost bond, supersedeas bond, or other appeal bond or its equivalent, (ii) expenses incurred in connection with recovery under any directors' and officers' liability insurance policies maintained by the Company, regardless of whether Indemnitee is ultimately determined to be entitled to such indemnification, advancement or Expenses or insurance recovery, as the case may be, and (iii) for purposes of Section 14(d) only, Expenses incurred by Indemnitee in connection with the interpretation, enforcement or defense of Indemnitee's rights under this Agreement, the Certificate of Incorporation, the Bylaws or under any directors' and officers' liability insurance policies maintained by the Company, by litigation or otherwise. The parties agree that for the purposes of any advancement of Expenses for which Indemnitee has made written demand to the Company in accordance with this Agreement, all Expenses included in such demand that are certified by affidavit of Indemnitee's counsel as being reasonable in the good faith judgment of such counsel shall be presumed conclusively to be reasonable. Expenses, however, shall not include amounts paid in settlement by Indemnitee or the amount of judgments or fines against Indemnitee.

(g) "Independent Counsel" shall mean a law firm, or a member of a law firm, that is experienced in matters of corporation law and neither presently is, nor in the past five years has been, retained to represent: (i) the Company or Indemnitee in any matter material to either such party (other than with respect to matters concerning Indemnitee under this Agreement, or of other indemnitees under similar indemnification agreements), or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term "Independent Counsel" shall not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or Indemnitee in an action to determine Indemnitee's rights under this Agreement. The Company agrees to pay the reasonable fees and expenses of the Independent Counsel referred to above and to fully indemnify such counsel against any and all Expenses, claims, liabilities and damages arising out of or relating to this Agreement or its engagement pursuant hereto.

(h) The term "Proceeding" shall include any threatened, pending or completed action, suit, claim, counterclaim, cross claim, arbitration, mediation, alternate dispute resolution mechanism, investigation, inquiry, administrative hearing or any other actual, threatened or completed proceeding, whether brought in the right of the Company or otherwise and whether of a civil, criminal, administrative, legislative, regulatory or investigative (formal or informal) nature, including any appeal therefrom, in which Indemnitee was, is or will be involved as a party, potential party, non-party witness or otherwise by reason of Indemnitee's Corporate Status, by reason of any action taken by Indemnitee (or a failure to take action by Indemnitee) or of any action (or failure to act) on Indemnitee's part while acting pursuant to Indemnitee's Corporate Status, in each case whether or not serving in such capacity at the time any liability or Expense is incurred for which indemnification, reimbursement, or advancement of Expenses can be provided under this Agreement. If Indemnitee believes in good faith that a given situation may lead to or culminate in the institution of a Proceeding, this shall be considered a Proceeding under this paragraph.

(i) Reference to "other enterprise" shall include employee benefit plans; references to "fines" shall include any excise tax assessed with respect to any employee benefit plan; references to "serving at the request of the Company" shall include any service as a director, officer, employee or agent of the Company which imposes duties on, or involves services by, such director, officer, employee or agent with respect to an employee benefit plan, its participants or beneficiaries; and a person who acted in good faith and in a manner Indemnitee reasonably believed to be in the best interests of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner "not opposed to the best interests of the Company" as referred to in this Agreement.

Section 3. Indemnity in Third-Party Proceedings. The Company shall indemnify Indemnitee in accordance with the provisions of this Section 3 if Indemnitee is, or is threatened to be made, a party to or a participant in any Proceeding, other than a Proceeding by or in the right of the Company to procure a judgment in its favor. Pursuant to this Section 3, Indemnitee shall be indemnified to the fullest extent permitted by applicable law against all Expenses, judgments, fines and amounts paid in settlement (including all interest, assessments and other charges paid or payable in connection with or in respect of such Expenses, judgments, fines and amounts paid in settlement) actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection with such Proceeding or any claim, issue or matter therein, if Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company and, in the case of a criminal Proceeding had no reasonable cause to believe that Indemnitee's conduct was unlawful. The parties hereto intend that this Agreement shall provide to the fullest extent permitted by law for indemnification in excess of that expressly permitted by statute, including, without limitation, any indemnification provided by the Certificate of Incorporation, the Bylaws, vote of the Company's stockholders or disinterested directors or applicable law.

Section 4. Indemnity in Proceedings by or in the Right of the Company. The Company shall indemnify Indemnitee in accordance with the provisions of this Section 4 if Indemnitee is, or is threatened to be made, a party to or a participant in any Proceeding by or in the right of the Company to procure a judgment in its favor. Pursuant to this Section 4, Indemnitee shall be indemnified to the fullest extent permitted by applicable law against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection with such Proceeding or any claim, issue or matter therein, if Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company. No indemnification for Expenses shall be made under this Section 4 in respect of any claim, issue or matter as to which Indemnitee shall have been finally adjudged by a court to be liable to the Company, unless and only to the extent that the Court of Chancery of the State of Delaware (the "Delaware Court") or any court in which the Proceeding was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnification.

Section 5. Indemnification for Expenses of a Party Who is Wholly or Partly Successful. Notwithstanding any other provisions of this Agreement, to the fullest extent permitted by applicable law and to the extent that Indemnitee is a party to (or a participant in) and is successful, on the merits or otherwise, in any Proceeding or in defense of any claim, issue or matter therein, in whole or in part, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee or on behalf of Indemnitee in connection therewith. If Indemnitee is not wholly successful in such Proceeding but is successful, on the merits or otherwise, as to one or more but less than all claims, issues or matters in such Proceeding, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection with or related to each successfully resolved claim, issue or matter to the fullest extent permitted by law. For purposes of this Section and without limitation, the termination of any claim, issue or matter in such a Proceeding by dismissal, with or without prejudice, shall be deemed to be a successful result as to such claim, issue or matter.

Section 6. Indemnification For Expenses of a Witness. Notwithstanding any other provision of this Agreement, to the fullest extent permitted by applicable law and to the extent that Indemnitee is, by reason of Indemnitee's Corporate Status, a witness, is or was made (or asked) to respond to discovery requests in any Proceeding, or otherwise asked to participate in any Proceeding to which Indemnitee is not a party, Indemnitee shall be indemnified against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection therewith.

Section 7. Partial Indemnification. If Indemnitee is entitled under any provision of this Agreement to indemnification by the Company for some or a portion of Expenses, but not, however, for the total amount thereof, the Company shall nevertheless indemnify Indemnitee for the portion thereof to which Indemnitee is entitled.

Section 8. Additional Indemnification.

(a) Notwithstanding any limitation in Sections 3, 4, or 5, the Company shall indemnify Indemnitee to the fullest extent permitted by applicable law if Indemnitee is, or is threatened to be made, a party to or a participant in any Proceeding (including a Proceeding by or in the right of the Company to procure a judgment in its favor) by reason of Indemnitee's Corporate Status.

(b) For purposes of Section 8(a), the meaning of the phrase "to the fullest extent permitted by applicable law" shall include, but not be limited to:

i. to the fullest extent permitted by the provision of the DGCL that authorizes or contemplates additional indemnification by agreement, or the corresponding provision of any amendment to or replacement of the DGCL, and

ii. to the fullest extent authorized or permitted by any amendments to or replacements of the DGCL adopted after the date of this Agreement that increase the extent to which a corporation may indemnify its officers and directors.

Section 9. Exclusions. Notwithstanding any provision in this Agreement [but subject to Section 15(e), however], the Company shall not be obligated under this Agreement to make any indemnification payment in connection with any claim involving Indemnitee:

(a) for which payment has actually been made to or on behalf of Indemnitee under any insurance policy or other indemnity provision, except with respect to any excess beyond the amount paid under any insurance policy or other indemnity provision; or

(b) for (i) an accounting of profits made from the purchase and sale (or sale and purchase) by Indemnitee of securities of the Company within the meaning of Section 16(b) of the Exchange Act (as defined in Section 2(b) hereof) or similar provisions of state statutory law or common law, (ii) any reimbursement of the Company by Indemnitee of any bonus or other incentive-based or equity-based compensation or of any profits realized by Indemnitee from the sale of securities of the Company, as required in each case under the Exchange Act (including any such reimbursements that arise from an accounting restatement of the Company pursuant to Section 304 of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"), or the payment to the Company of profits arising from the purchase and sale by Indemnitee of securities in violation of Section 306 of the Sarbanes-Oxley Act) or (iii) any reimbursement of the Company by Indemnitee of any compensation pursuant to any compensation recoupment or clawback policy adopted by the Board or the compensation committee of the Board, including but not limited to any such policy adopted to comply with stock exchange listing requirements implementing Section 10D of the Exchange Act; or

(c) except as provided in Section 14(d) of this Agreement, in connection with any Proceeding (or any part of any Proceeding) initiated by Indemnitee, including any Proceeding (or any part of any Proceeding) initiated by Indemnitee against the Company or its directors, officers, employees or other indemnitees, unless (i) the Board authorized the Proceeding (or any part of any Proceeding) prior to its initiation, (ii) such payment arises in connection with any mandatory counterclaim or cross claim brought or raised by Indemnitee in any Proceeding (or any part of any Proceeding), or (iii) the Company provides the indemnification, in its sole discretion, pursuant to the powers vested in the Company under applicable law.

Section 10. Advances of Expenses. Notwithstanding any provision of this Agreement to the contrary (other than Section 14(d)), the Company shall advance, to the extent not prohibited by law, the Expenses incurred by Indemnitee or on behalf of Indemnitee in connection with any Proceeding (or any part of any Proceeding) (x) not initiated by Indemnitee (other than in connection with any mandatory counterclaim or cross claim brought or raised by Indemnitee therein as provided in Section 9(c)), or (y) initiated by Indemnitee with the prior approval of the Board as provided in Section 9(c), and such advancement shall be made within thirty (30) days after the receipt by the Company of a statement or statements requesting such advances from time to time, whether prior to or after final disposition of any Proceeding. Advances shall be unsecured and interest free. Advances shall be made without regard to Indemnitee's ability to repay the Expenses and without regard to Indemnitee's ultimate entitlement to indemnification under the other provisions of this Agreement. In accordance with Section 14(d), advances shall include any and all reasonable Expenses incurred pursuing an action to enforce this right of advancement, including Expenses incurred preparing and forwarding statements to the Company to support the advances claimed. Indemnitee shall qualify for advances upon the execution and delivery to the Company of this Agreement, which shall constitute an undertaking providing that Indemnitee undertakes to repay the amounts advanced (without interest) by the Company pursuant to this Section 10, if and only to the extent that it is ultimately determined that Indemnitee is not entitled to be indemnified by the Company. No other form of undertaking shall be required other than the execution of this Agreement. This Section 10 shall not apply to any claim made by Indemnitee for which indemnity is excluded pursuant to Section 9.

Section 11. Procedure for Notification and Defense of Claim.

(a) Indemnitee shall notify the Company in writing of any matter with respect to which Indemnitee intends to seek indemnification or advancement of Expenses hereunder as soon as reasonably practicable following the receipt by Indemnitee of written notice thereof. The written notification to the Company shall include a description of the nature of the Proceeding and the facts underlying the Proceeding. To obtain indemnification under this Agreement, Indemnitee shall submit to the Company a written request, including therein or therewith such documentation and information as is reasonably available to Indemnitee and is reasonably necessary to determine whether and to what extent Indemnitee is entitled to indemnification following the final disposition of such Proceeding. The omission by Indemnitee to notify the Company hereunder will not relieve the Company from any liability which it may have to Indemnitee hereunder or otherwise than under this Agreement, and any delay in so notifying the Company shall not constitute a waiver by Indemnitee of any rights under this Agreement. The Secretary of the Company shall, promptly upon receipt of such a request for indemnification, advise the Board in writing that Indemnitee has requested indemnification.

(b) The Company will be entitled to participate in the Proceeding at its own expense.

(c) The Company shall not settle any Proceeding (in whole or in part) if such settlement would impose any Expense, judgment, liability, fine, penalty or limitation on Indemnitee in respect of which Indemnitee is not entitled to be indemnified hereunder without Indemnitee's prior written consent, which shall not be unreasonably withheld.

Section 12. Procedure Upon Application for Indemnification.

(a) Upon written request by Indemnitee for indemnification pursuant to Section 11(a), a determination, if required by applicable law, with respect to Indemnitee's entitlement thereto shall be made in the specific case: (i) if a Change in Control shall have occurred, by Independent Counsel in a written opinion to the Board, a copy of which shall be delivered to Indemnitee; or (ii) if a Change in Control shall not have occurred, (A) by a majority vote of the Disinterested Directors, even though less than a quorum of the Board, (B) by a committee of Disinterested Directors designated by a majority vote of the Disinterested Directors, even though less than a quorum of the Board, (C) if there are no such Disinterested Directors or, if such Disinterested Directors so direct, by Independent Counsel in a written opinion to the Board, a copy of which shall be delivered to Indemnitee or (D) if so directed by the Board, by the stockholders of the Company; and, if it is so determined that Indemnitee is entitled to indemnification, payment to Indemnitee shall be made within ten (10) days after such determination. Indemnitee shall cooperate with the person, persons or entity making such determination with respect to Indemnitee's entitlement to indemnification, including providing to such person, persons or entity upon reasonable advance request any documentation or information which is not privileged or otherwise protected from disclosure and which is reasonably available to Indemnitee and reasonably necessary to such determination. Any costs or Expenses (including attorneys' fees and disbursements) incurred by Indemnitee or on behalf of Indemnitee in so cooperating with the person, persons or entity making such determination shall be borne by the Company (irrespective of the determination as to Indemnitee's entitlement to indemnification) and the Company hereby indemnifies and agrees to hold Indemnitee harmless therefrom. The Company promptly will advise Indemnitee in writing with respect to any determination that Indemnitee is or is not entitled to indemnification, including a description of any reason or basis for which indemnification has been denied.

(b) In the event the determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 12(a) hereof, the Independent Counsel shall be selected as provided in this Section 12(b). If a Change in Control shall not have occurred, the Independent Counsel shall be selected by the Board, and the Company shall give written notice to Indemnitee advising Indemnitee of the identity of the Independent Counsel so selected. If a Change in Control shall have occurred, the Independent Counsel shall be selected by Indemnitee (unless Indemnitee shall request that such selection be made by the Board, in which event the preceding sentence shall apply), and Indemnitee shall give written notice to the Company advising it of the identity of the Independent Counsel so selected. In either event, Indemnitee or the Company, as the case may be, may, within ten (10) days after such written notice of selection shall have been given, deliver to the Company or to Indemnitee, as the case may be, a written objection to such selection; provided, however, that such objection may be asserted only on the ground that the Independent Counsel so selected does not meet the requirements of "Independent Counsel" as defined in Section 2 of this Agreement, and the objection shall set forth with particularity the factual basis of such assertion. Absent a proper and timely objection, the person so selected shall act as Independent Counsel. If such written objection is so made and substantiated, the Independent Counsel so selected may not serve as Independent Counsel unless and until such objection is withdrawn or the Delaware Court has determined that such objection is without merit. If, within twenty (20) days after the later of submission by Indemnitee of a written request for indemnification pursuant to Section 11(a) hereof and the final disposition of the Proceeding, no Independent Counsel shall have been selected and not objected to, either the Company or Indemnitee may petition the Delaware Court for resolution of any objection which shall have been made by the Company or Indemnitee to the other's selection of Independent Counsel and/or for the appointment as Independent Counsel of a person selected by such court or by such other person as such court shall designate, and the person with respect to whom all objections are so resolved or the person so appointed shall act as Independent Counsel under Section 12(a) hereof. Upon the due commencement of any judicial proceeding or arbitration pursuant to Section 14(a) of this Agreement, Independent Counsel shall be discharged and relieved of any further responsibility in such capacity (subject to the applicable standards of professional conduct then prevailing).

(c) If the Company disputes a portion of the amounts for which indemnification is requested, the undisputed portion shall be paid and only the disputed portion withheld pending resolution of any such dispute.

Section 13. Presumptions and Effect of Certain Proceedings.

(a) In making a determination with respect to entitlement to indemnification hereunder, the person or persons or entity making such determination shall, to the fullest extent not prohibited by law, presume that Indemnitee is entitled to indemnification under this Agreement if Indemnitee has submitted a request for indemnification in accordance with Section 11(a) of this Agreement, and the Company shall, to the fullest extent not prohibited by law, have the burden of proof to overcome that presumption in connection with the making by any person, persons or entity of any determination contrary to that presumption. Neither the failure of the Company (including by its directors or Independent Counsel) to have made a determination prior to the commencement of any action pursuant to this Agreement that indemnification is proper in the circumstances because Indemnitee has met the applicable standard of conduct, nor an actual determination by the Company (including by its directors or Independent Counsel) that Indemnitee has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that Indemnitee has not met the applicable standard of conduct.

(b) Subject to Section 14(e), if the person, persons or entity empowered or selected under Section 12 of this Agreement to determine whether Indemnitee is entitled to indemnification shall not have made a determination within sixty (60) days after receipt by the Company of the request therefor, the requisite determination of entitlement to indemnification shall, to the fullest extent not prohibited by law, be deemed to have been made and Indemnitee shall be entitled to such indemnification, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statement not materially misleading, in connection with the request for indemnification, or (ii) a prohibition of such indemnification under applicable law; provided, however, that such 60-day period may be extended for a reasonable time, not to exceed an additional thirty (30) days, if the person, persons or entity making the determination with respect to entitlement to indemnification in good faith requires such additional time for the obtaining or evaluating of documentation and/or information relating thereto; and provided, further, that the foregoing provisions of this Section 13(b) shall not apply (i) if the determination of entitlement to indemnification is to be made by the stockholders pursuant to Section 12(a) of this Agreement and if (A) within fifteen (15) days after receipt by the Company of the request for such determination the Board has resolved to submit such determination to the stockholders for their consideration at an annual meeting thereof to be held within seventy-five (75) days after such receipt and such determination is made thereat, or (B) a special meeting of stockholders is called within fifteen (15) days after such receipt for the purpose of making such determination, such meeting is held for such purpose within sixty (60) days after having been so called and such determination is made thereat, or (ii) if the determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 12(a) of this Agreement.

(c) The termination of any Proceeding or of any claim, issue or matter therein, by judgment, order, settlement or conviction, or upon a plea of nolo contendere or its equivalent, shall not (except as otherwise expressly provided in this Agreement) of itself adversely affect the right of Indemnitee to indemnification or create a presumption that Indemnitee did not act in good faith and in a manner which Indemnitee reasonably believed to be in or not opposed to the best interests of the Company or, with respect to any criminal Proceeding, that Indemnitee had reasonable cause to believe that Indemnitee's conduct was unlawful.

(d) For purposes of any determination of good faith, Indemnitee shall be deemed to have acted in good faith if Indemnitee's action is based on the records or books of account of the Enterprise, including financial statements, or on information supplied to Indemnitee by the directors or officers of the Enterprise in the course of their duties, or on the advice of legal counsel for the Enterprise or on information or records given or reports made to the Enterprise by an independent certified public accountant or by an appraiser, financial advisor or other expert selected with reasonable care by or on behalf of the Enterprise. The provisions of this Section 13(d) shall not be deemed to be exclusive or to limit in any way the other circumstances in which Indemnitee may be deemed to have met the applicable standard of conduct set forth in this Agreement.

(e) The knowledge and/or actions, or failure to act, of any director, officer, trustee, partner, managing member, fiduciary, agent or employee of the Enterprise shall not be imputed to Indemnitee for purposes of determining the right to indemnification under this Agreement.

Section 14. Remedies of Indemnitee.

(a) Subject to Section 14(e), in the event that (i) a determination is made pursuant to Section 12 of this Agreement that Indemnitee is not entitled to indemnification under this Agreement, (ii) advancement of Expenses is not timely made pursuant to Section 10 of this Agreement, (iii) no determination of entitlement to indemnification shall have been made pursuant to Section 12(a) of this Agreement within ninety (90) days after receipt by the Company of the request for indemnification, (iv) payment of indemnification is not made pursuant to Section 5, 6 or 7 or the second to last sentence of Section 12(a) of this Agreement within ten (10) days after receipt by the Company of a written request therefor, (v) payment of indemnification pursuant to Section 3, 4 or 8 of this Agreement is not made within ten (10) days after a determination has been made that Indemnitee is entitled to indemnification, or (vi) the Company or any other person takes or threatens to take any action to declare this Agreement void or unenforceable, or institutes any litigation or other action or Proceeding designed to deny, or to recover from, Indemnitee the benefits provided or intended to be provided to Indemnitee hereunder, Indemnitee shall be entitled to an adjudication by a court of Indemnitee's entitlement to such indemnification or advancement of Expenses. Alternatively, Indemnitee, at Indemnitee's option, may seek an award in arbitration to be conducted by a single arbitrator pursuant to the Commercial Arbitration Rules of the American Arbitration Association. Indemnitee shall commence such proceeding seeking an adjudication or an award in arbitration within 180 days following the date on which Indemnitee first has the right to commence such proceeding pursuant to this Section 14(a). The Company shall not oppose Indemnitee's right to seek any such adjudication or award in arbitration.

(b) In the event that a determination shall have been made pursuant to Section 12(a) of this Agreement that Indemnitee is not entitled to indemnification, any judicial proceeding or arbitration commenced pursuant to this Section 14 shall be conducted in all respects as a de novo trial, or arbitration, on the merits and Indemnitee shall not be prejudiced by reason of that adverse determination. In any judicial proceeding or arbitration commenced pursuant to this Section 14, the Company shall have the burden of proving Indemnitee is not entitled to indemnification or advancement of Expenses, as the case may be.

(c) If a determination shall have been made pursuant to Section 12(a) of this Agreement that Indemnitee is entitled to indemnification, the Company shall be bound by such determination in any judicial proceeding or arbitration commenced pursuant to this Section 14, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statement not materially misleading, in connection with the request for indemnification, or (ii) a prohibition of such indemnification under applicable law.

(d) The Company shall, to the fullest extent not prohibited by law, be precluded from asserting in any judicial proceeding or arbitration commenced pursuant to this Section 14 that the procedures and presumptions of this Agreement are not valid, binding and enforceable and shall stipulate in any such court or before any such arbitrator that the Company is bound by all the provisions of this Agreement. It is the intent of the Company that, to the fullest extent permitted by law, Indemnitee not be required to incur legal fees or other Expenses associated with the interpretation, enforcement or defense of Indemnitee's rights under this Agreement by litigation or otherwise because the cost and expense thereof would substantially detract from the benefits intended to be extended to Indemnitee hereunder. The Company shall, to the fullest extent permitted by law, indemnify Indemnitee against any and all Expenses and, if requested by Indemnitee, shall (within ten (10) days after receipt by the Company of a written request therefor) advance, to the extent not prohibited by law, such Expenses to Indemnitee, which are incurred by Indemnitee or on behalf of Indemnitee in connection with any action brought by Indemnitee for indemnification or advancement of Expenses from the Company under this Agreement or under any directors' and officers' liability insurance policies maintained by the Company if, in the case of indemnification, Indemnitee is wholly successful on the underlying claims; if Indemnitee is not wholly successful on the underlying claims, then such indemnification shall be only to the extent Indemnitee is successful on such underlying claims or otherwise as permitted by law, whichever is greater.

(e) Notwithstanding anything in this Agreement to the contrary, no determination as to entitlement of Indemnitee to indemnification under this Agreement shall be required to be made prior to the final disposition of the Proceeding.

Section 15. Non-exclusivity; Survival of Rights; Insurance; Subrogation.

(a) The rights of indemnification and to receive advancement of Expenses as provided by this Agreement (i) shall not be deemed exclusive of any other rights to which Indemnitee may at any time be entitled under applicable law, the Certificate of Incorporation, the Bylaws, any agreement, a vote of stockholders or a resolution of directors, or otherwise and (ii) shall be interpreted independently of, and without reference to, any other such rights to which Indemnitee may at any time be entitled. No amendment, alteration or repeal of this Agreement or of any provision hereof shall limit or restrict any right of Indemnitee under this Agreement in respect of any action taken or omitted by Indemnitee in Indemnitee's Corporate Status prior to such amendment, alteration or repeal. To the extent that a change in Delaware law, whether by statute or judicial decision, permits greater indemnification or advancement of Expenses than would be afforded currently under the Certificate of Incorporation and this Agreement, it is the intent of the parties hereto that Indemnitee shall enjoy by this Agreement the greater benefits so afforded by such change. No right or remedy herein conferred is intended to be exclusive of any other right or remedy, and every other right and remedy shall be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other right or remedy.

(b) To the extent that the Company maintains an insurance policy or policies providing liability insurance for directors, officers, employees, or agents of the Enterprise, Indemnitee shall be covered by such policy or policies in accordance with its or their terms to the maximum extent of the coverage available for any such director, officer, employee or agent under such policy or policies. If, at the time of the receipt of a notice of a claim pursuant to the terms hereof, the Company has director and officer liability insurance in effect, the Company shall give prompt notice of such claim or of the commencement of a Proceeding, as the case may be, to the insurers in accordance with the procedures set forth in the respective policies. The Company shall thereafter take all necessary or desirable action to cause such insurers to pay, on behalf of Indemnitee, all amounts payable as a result of such Proceeding in accordance with the terms of such policies.

(c) In the event of any payment made by the Company under this Agreement, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee [(other than any rights of recovery of Indemnitee from a Fund Indemnitor (as defined below) or under any insurance provided by the Fund or its affiliates)], who shall execute all papers required and take all action necessary to secure such rights, including execution of such documents as are necessary to enable the Company to bring suit to enforce such rights.

(d) [Except as provided for under Section 15(e) of this Agreement, the] The Company shall not be liable under this Agreement to make any payment of amounts otherwise indemnifiable (or for which advancement is provided hereunder) hereunder if and to the extent that Indemnitee has otherwise actually received such payment under any insurance policy, contract, agreement or otherwise.

(e) [The Company hereby acknowledges that Indemnitee has certain rights to indemnification, advancement of expenses and/or insurance provided by the Fund and certain of its affiliates (collectively, the "Fund Indemnitors"). The Company hereby agrees (i) that it is the indemnitor of first resort (i.e., its obligations to Indemnitee are primary and any obligation of the Fund Indemnitors to advance expenses or to provide indemnification for the same expenses or liabilities incurred by Indemnitee are secondary), (ii) that it shall be required to advance the full amount of Expenses incurred by Indemnitee and shall be liable for the full amount of all Expenses, judgments, penalties, fines and amounts paid in settlement to the extent legally permitted and as required by the Certificate of Incorporation or Bylaws (or any agreement between the Company and Indemnitee), without regard to any rights Indemnitee may have against the Fund Indemnitors, and, (iii) that it irrevocably waives, relinquishes and releases the Fund Indemnitors from any and all claims against the Fund Indemnitors for contribution, subrogation or any other recovery of any kind in respect thereof. The Company further agrees that no advancement or payment by the Fund Indemnitors on behalf of Indemnitee with respect to any claim for which Indemnitee has sought indemnification from the Company shall affect the foregoing and the Fund Indemnitors shall have a right of contribution and/or be subrogated to the extent of such advancement or payment to all of the rights of recovery of Indemnitee against the Company. The Company and Indemnitee agree that the Fund Indemnitors are express third party beneficiaries of the terms hereof.]

(f) [Except as provided in paragraph (e) above,] [T]he Company's obligation to indemnify or advance Expenses hereunder to Indemnitee who is or was serving at the request of the Company as a director, officer, trustee, partner, managing member, fiduciary, employee or agent of any other corporation, limited liability company, partnership, joint venture, trust, employee benefit plan or other enterprise shall be reduced by any amount Indemnitee has actually received as indemnification or advancement of Expenses from such other corporation, limited liability company, partnership, joint venture, trust or other enterprise.

Section 16. Duration of Agreement. This Agreement shall continue until and terminate upon the later of: (a) ten (10) years after the date that Indemnitee shall have ceased to serve as a [director] [officer] of the Company or (b) one (1) year after the final termination of any Proceeding then pending in respect of which Indemnitee is granted rights of indemnification or advancement of Expenses hereunder and of any proceeding (including any appeal thereof) commenced by Indemnitee pursuant to Section 14 of this Agreement [or by a Fund Indemnitor pursuant to Section 15(e) of this Agreement, in either case,] relating thereto. The indemnification and advancement of expenses rights provided by or granted pursuant to this Agreement shall be binding upon and be enforceable by the parties hereto and their respective successors and assigns (including any direct or indirect successor by purchase, merger, consolidation or otherwise to all or substantially all of the business or assets of the Company), shall continue as to an Indemnitee who has ceased to be a director, officer, employee or agent of the Company or of any other Enterprise, and shall inure to the benefit of Indemnitee and Indemnitee's spouse, assigns, heirs, devisees, executors and administrators and other legal representatives. The Company shall require and shall cause any successor (whether direct or indirect by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company to, by written agreement, expressly assume and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform if no such succession had taken place.

Section 17. Severability. Nothing in this Agreement is intended to require or shall be construed as requiring the Company to do or fail to do any act in violation of applicable law. If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable for any reason whatsoever: (a) the validity, legality and enforceability of the remaining provisions of this Agreement (including without limitation, each portion of any Section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby and shall remain enforceable to the fullest extent permitted by law; (b) such provision or provisions shall be deemed reformed to the extent necessary to conform to applicable law and to give the maximum effect to the intent of the parties hereto; and (c) to the fullest extent possible, the provisions of this Agreement (including, without limitation, each portion of any Section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested thereby.

Section 18. Enforcement.

(a) The Company expressly confirms and agrees that it has entered into this Agreement and assumed the obligations imposed on it hereby in order to induce Indemnitee to serve as a director or officer of the Company, and the Company acknowledges that Indemnitee is relying upon this Agreement in serving or continuing to serve as a director or officer of the Company.

(b) This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and supersedes and replaces all prior agreements and understandings, oral, written and implied, between the parties hereto with respect to the subject matter hereof, including any agreement covering the subject matter of this Agreement previously entered into between the Company and Indemnitee; provided, however, that this Agreement is a supplement to and in furtherance of the Certificate of Incorporation, the Bylaws, any directors' and officers' insurance maintained by the Company and applicable law, and shall not be deemed a substitute therefor, nor to diminish or abrogate any rights of Indemnitee thereunder.

Section 19. Modification and Waiver. No supplement, modification or amendment of this Agreement shall be binding unless executed in writing by the parties hereto. No waiver of any of the provisions of this Agreement shall be deemed or shall constitute a waiver of any other provisions of this Agreement nor shall any waiver constitute a continuing waiver.

Section 20. Notice by Indemnitee. Indemnitee agrees promptly to notify the Company in writing upon being served with any summons, citation, subpoena, complaint, indictment, information or other document relating to any Proceeding or matter which may be subject to indemnification or advancement of Expenses covered hereunder. The failure of Indemnitee to so notify the Company shall not relieve the Company of any obligation which it may have to Indemnitee under this Agreement or otherwise.

Section 21. Notices. All notices, requests, demands and other communications under this Agreement shall be in writing and shall be deemed to have been duly given if (a) delivered by hand and receipted for by the party to whom said notice or other communication shall have been directed, (b) mailed by certified or registered mail with postage prepaid, on the third business day after the date on which it is so mailed, (c) mailed by reputable overnight courier and receipted for by the party to whom said notice or other communication shall have been directed or (d) sent by facsimile transmission, with receipt of oral confirmation that such transmission has been received:

(a) If to Indemnitee, at the address indicated on the signature page of this Agreement, or such other address as Indemnitee shall provide to the Company.

(b) If to the Company, to:

CARISMA Therapeutics Inc.
3675 Market Street, Suite 200
Philadelphia, PA 19104
Attention: Chief Financial Officer

or to any other address as may have been furnished to Indemnitee by the Company.

Section 22. Contribution. To the fullest extent permissible under applicable law, if the indemnification provided for in this Agreement is unavailable to Indemnitee for any reason whatsoever, the Company, in lieu of indemnifying Indemnitee, shall contribute to the amount incurred by Indemnitee, whether for judgments, fines, penalties, excise taxes, amounts paid or to be paid in settlement and/or for Expenses, in connection with any claim relating to an indemnifiable event under this Agreement, in such proportion as is deemed fair and reasonable in light of all of the circumstances of such Proceeding in order to reflect (i) the relative benefits received by the Company, on the one hand, and Indemnitee, on the other hand, as a result of the event(s) and/or transaction(s) giving cause to such Proceeding; and/or (ii) the relative fault of the Company (and its other directors, officers, employees and agents), on the one hand, and Indemnitee, on the other hand, in connection with such event(s) and/or transaction(s).

Section 23. Applicable Law and Consent to Jurisdiction. This Agreement and the legal relations among the parties shall be governed by, and construed and enforced in accordance with, the laws of the State of Delaware, without regard to its conflict of laws rules. Except with respect to any arbitration commenced by Indemnitee pursuant to Section 14(a) of this Agreement, the Company and Indemnitee hereby irrevocably and unconditionally (i) agree that any action or proceeding arising out of or in connection with this Agreement shall be brought only in the Delaware Court, and not in any other state or federal court in the United States of America or any court in any other country, (ii) consent to submit to the exclusive jurisdiction of the Delaware Court for purposes of any action or proceeding arising out of or in connection with this Agreement, (iii) waive any objection to the laying of venue of any such action or proceeding in the Delaware Court, and (iv) waive, and agree not to plead or to make, any claim that any such action or proceeding brought in the Delaware Court has been brought in an improper or inconvenient forum.

Section 24. Identical Counterparts. This Agreement may be executed in one or more counterparts, each of which shall for all purposes be deemed to be an original but all of which together shall constitute one and the same Agreement. Only one such counterpart signed by the party against whom enforceability is sought needs to be produced to evidence the existence of this Agreement.

Section 25. Miscellaneous. Use of the masculine pronoun shall be deemed to include usage of the feminine pronoun where appropriate. The headings of this Agreement are inserted for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction thereof.

[*The remainder of this page is intentionally left blank.*]

IN WITNESS WHEREOF, the parties have executed this Agreement as of the day and year first set forth above.

CARISMA THERAPEUTICS INC.	INDEMNITEE
By: _____	By: _____
Name: _____	Name: _____
Title: _____	Address: _____
	_____
	_____

Exhibit 10.7

Execution Copy

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT AGREEMENT (the "Agreement"), is made as of March 7, 2023 (the "Effective Date"), by and between Carisma Therapeutics Inc., a Delaware corporation (the "Company"), and Steven Kelly (the "Executive") (together, the "Parties").

RECITALS

WHEREAS, the Executive has been employed by CTx Operations, Inc. (f/k/a CARISMA Therapeutics Inc.) (the "Carisma Sub") pursuant to that certain letter agreement dated February 12, 2018 detailing the terms and conditions of Executive's employment with the Carisma Sub (the "Prior Agreement");

WHEREAS, pursuant to that certain Agreement and Plan of Merger and Reorganization dated September 20, 2022 and amended on December 29, 2022 and February 13, 2023 (the "Merger Agreement"), by and among the Company (f/k/a Sesen Bio, Inc.), Seahawk Merger Sub, Inc., a Delaware corporation and wholly-owned subsidiary of the Company ("Merger Sub"), and the Carisma Sub, Merger Sub merged with and into Carisma Sub, with Carisma Sub continuing as a wholly-owned subsidiary of the Company and the surviving corporation of the merger (the "Merger");

WHEREAS, the Parties desire to enter into an agreement whereby the Executive will be employed as President and Chief Executive Officer of the Company on the terms contained in this Agreement; and

WHEREAS, the Executive has agreed to accept such employment with the Company on the terms and conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the foregoing and of the respective covenants and agreements of the Parties herein contained, the Parties hereto agree to the following terms, which shall govern the Executive's employment from and after the Effective Date:

1. *Agreement.* This Agreement shall be effective as of the Effective Date. The Executive's employment on the terms contained in this Agreement shall commence on the Effective Date and shall continue until such employment relationship is terminated in accordance with Section 7 hereof (the "Term of Employment").

2. *Position*. During the Term of Employment, the Executive shall serve as the President and Chief Executive Officer of the Company and shall serve on the Company's board of directors (the "Board"), subject to his reelection thereto from time to time by the Company's stockholders, working out of the Company's office in Philadelphia, Pennsylvania, and travelling as reasonably required by the Executive's job duties.

3. *Scope of Employment*. During the Term of Employment, the Executive shall be responsible for the performance of those duties consistent with the Executive's position as President and Chief Executive Officer. The Executive shall report to the Board. The Executive agrees to devote the Executive's full business time, best efforts, skill, knowledge, attention, and energies to the advancement of the Company's business and interests and to the performance of the Executive's duties and responsibilities as an employee of the Company and not to engage in any other business activities (whether as an employee, consultant, board member, advisor or in any other capacity) without prior approval from the Company, except (a) as set forth on Schedule 1 attached hereto and (b) the Executive may engage in charitable or civic activities and/or serve as an executor, trustee, or other similar fiduciary capacity, provided, however, that in no event may any activity be undertaken or continued if it would (i) be in violation of any provision of this Agreement or other agreement between the Executive and the Company, (ii) interfere with the performance of the Executive's duties for the Company, or (iii) present a conflict of interest with the Company's business interests. As an employee of the Company, the Executive will be required to comply with all Company policies and procedures. Violations of the Company's policies may lead to immediate termination of the Executive's employment, provided, however, that nothing in the foregoing shall alter any rights the Executive may have as set forth in Section 8 below. Further, the Company's premises, including all workspaces, furniture, documents, and other tangible materials, and all information technology resources of the Company (including computers, data and other electronic files, and all internet and email) are subject to oversight and inspection by the Company at any time. Company employees should have no expectation of privacy with regard to any Company premises, materials, resources, or information.

4. *Compensation*. As full compensation for all services rendered by the Executive to the Company and any affiliate thereof, during the Term of Employment, the Company will provide to the Executive the following:

(a) *Base Salary*. The Executive shall receive a base salary, effective as of January 1, 2023, at the annualized rate of $560,000 (the "Base Salary"). For the avoidance of doubt, to the extent Executive is entitled to additional base salary for the period between January 1, 2023 and the Effective Date after taking into account any payments of base salary made by Carisma Sub to the Executive prior to the Effective Date, such payments will be made in the first payroll following the Effective Date. Otherwise, the Executive's Base Salary shall be paid in equal installments in accordance with the Company's regularly established payroll procedures. The Executive's Base Salary will be reviewed on an annual or more frequent basis by the Board and is subject to change in the discretion of the Board.

(b) *Annual Discretionary Bonus*. The Executive will be eligible to receive an annual discretionary performance bonus of 55% of the Executive's Base Salary (the "Target Bonus"), based on the Board's assessment of the Executive's performance and the Company's attainment of targeted goals to be set by the Board in its sole discretion. Following the close of each calendar year, the Board will determine whether the Executive has earned a performance bonus, and the amount of any performance bonus, based on the set criteria. No amount of the performance bonus is guaranteed, and the Executive must be an active employee of the Company on the date the bonus is distributed in order to be eligible for and to earn any bonus award, as it also serves as an incentive for the Executive to remain employed by the Company. The Executive's bonus eligibility will be reviewed on an annual or more frequent basis by the Board and is subject to change in the discretion of the Board.

(c) *Equity Award*. The Executive will be eligible to receive equity awards, if any, at such times and on such terms and conditions as the Board shall, in its sole discretion, determine.

(d) *Paid Time Off*. The Executive will be eligible for a maximum of twenty-five (25) days of paid time off ("PTO") per calendar year to be taken at such times as may be approved by the Company. The number of PTO days for which the Executive is eligible shall accrue at the rate of 2.083 days per month that the Executive is employed during such calendar year. Any unused PTO time will be forfeited at the end of each calendar year.

(e) *Benefits*. Subject to eligibility requirements and the Company's polices, the Executive shall have the right, on the same basis as other similarly-situated employees of the Company, to participate in, and to receive benefits under, all employee health, disability, insurance, fringe, welfare benefit and retirement plans, arrangements, practices and programs the Company provides to its senior executives in accordance with the terms thereof as in effect from time to time. The Company reserves the right to modify, amend and/or terminate any and all of its benefits plans at is discretion.

(f) *Withholdings*. All compensation payable to the Executive shall be subject to applicable taxes and withholdings.

5. *Expenses*. The Executive will be reimbursed for the Executive's actual, necessary and reasonable business expenses pursuant to Company policy, subject to the provisions of Section 3 of Exhibit A attached hereto.

6. *Restrictive Covenants Agreements*. The Executive hereby acknowledges that each of the Invention and Non-Disclosure Agreement and the Non-Competition and Non-Solicitation Agreement that the Executive previously executed in connection with the Executive's employment with the Carisma Sub (together, the "Restrictive Covenant Agreements") remain in full force and effect, with the terms thereof hereby deemed incorporated herein; provided, however, that the references therein to "Company" shall be deemed hereinafter to mean the Company, as well as the Carisma Sub. The Executive further acknowledges that the Executive's employment with the Company is conditioned on the Executive's continued compliance with the Restrictive Covenant Agreements.

7. *Employment Termination*. This Agreement and the employment of the Executive shall terminate upon the occurrence of any of the following:

(a) Upon the death of the Executive or at the election of the Company due to the Executive's "Disability". As used in this Agreement, the term "Disability" shall mean a physical or mental illness or disability that prevents the Executive from performing the duties of the Executive's position for a period of more than any three (3) consecutive months or for periods aggregating more than twenty-six (26) weeks. The Company shall determine in good faith and in its sole discretion whether the Executive is unable to perform the services provided for herein.

(b) At the election of the Company, with or without "Cause" (as defined below), immediately upon written notice by the Company to the Executive. As used in this Agreement, "Cause" shall mean:

(i) the Executive's engagement in any conduct that has materially and adversely affected, or is reasonably likely to materially and adversely affect, the business interests or reputation of the Company (for avoidance of doubt, "conduct" in this subsection does not mean poor performance or failure to meet Company objectives);

(ii) any breach by the Executive of the Restrictive Covenant Agreements;

(iii) the Executive's willful and repeated failure to perform in any material respect, the Executive's duties to the Company under this Agreement;

(iv) the Executive's fraud or embezzlement, or the Executive's willful misconduct with respect to the Company;

(v) the Executive's material breach of this Agreement; or

(vi) the Executive's conviction of, or plea of guilty or *nolo contendere* to, a misdemeanor relating to the Company, any crime involving dishonesty or moral turpitude, or any felony;

provided however, that with respect to subsections (i), (ii) (iii) and (v) hereof, the Executive was given thirty (30) calendar days' written notice of such conduct, breach, or deficiencies and an opportunity to cure such conduct, breach or deficiencies but the Executive failed to do so within such period (provided that the Executive is eligible for no more than two "cure" opportunities during the Executive's employment).

(c) At the election of the Executive, with or without "Good Reason" (as defined below), upon written notice by the Executive to the Company (subject, if it is with Good Reason, to the timing provisions set forth in the definition of Good Reason). As used in this Agreement, "Good Reason" shall mean the occurrence (without the Executive's prior written consent), of any of the following events:

(i) a material reduction in the Executive's authority, duties, or responsibilities or a material reduction in the authority, duties or responsibilities of the person to whom the Executive reports;

(ii) the relocation of the principal place at which the Executive provides services to the Company by at least fifty (50) miles and to a location such that the Executive's daily commuting distance is increased;

(iii) a material reduction of the Executive's Base Salary; or

(iv) a material breach by the Company of its obligations under this letter Agreement.

No termination will be treated as a termination by the Executive for Good Reason unless (x) the Executive has given written notice to the Company of the Executive's intention to terminate the Executive's employment for Good Reason, describing the grounds for such action, no later than ninety (90) days after the first occurrence of such circumstances, (y) the Executive has provided the Company with at least thirty (30) days in which to cure the circumstances, and (z) if the Company is not successful in curing the circumstances, the Executive ends the Executive's employment within thirty (30) calendar days following the cure period in (y).

8. *Effect of Termination.*

(a) *All Terminations Other Than by the Company Without Cause or by the Executive With Good Reason*. If the Executive's employment is terminated under any circumstances other than a termination by the Company without Cause or a termination by the Executive with Good Reason (including a voluntary termination by the Executive without Good Reason or a termination by the Company for Cause or due to the Executive's death or Disability), the Company's obligations under this Agreement shall immediately cease and the Executive shall only be entitled to receive (i) the Base Salary that has accrued and to which the Executive is entitled as of the effective date of such termination, to be paid in accordance with the Company's established payroll procedure and applicable law but no later than the next regularly scheduled pay period, (ii) unreimbursed business expenses for which expenses the Executive has timely submitted appropriate documentation in accordance with Section 5 hereof, (iii) any amounts or benefits to which the Executive is then entitled under the terms of the benefit plans then-sponsored by the Company in accordance with their terms (and not accelerated to the extent acceleration does not satisfy Section 409A of the Internal Revenue Code of 1986, as amended, (the "Code")), and (iv) any accrued but unused vacation time through the date of termination, to be paid in accordance with Company policy and applicable law (the payments described in this sentence, the "Accrued Obligations").

(b) *Termination by the Company Without Cause or by the Executive With Good Reason More Than Three Months Prior to or More Than Twelve Months Following a Change in Control*. If the Executive's employment is terminated by the Company without Cause or by the Executive with Good Reason more than three (3) months prior to, or more than twelve (12) months following, a Change in Control (as defined below), the Executive shall be entitled to the Accrued Obligations. In addition, and subject to Exhibit A and the conditions of Section 8(d), the Company shall: (i) continue to pay to the Executive, in accordance with the Company's regularly established payroll procedures, the Executive's Base Salary for a period of twelve (12) months; (ii) pay to the Executive, in a single lump sum on the Payment Date (as defined below) an amount equal to one hundred percent (100%) of the Executive's Target Bonus for the year in which termination occurs, prorated based on a fraction, the numerator of which is the number of days during the calendar year in which the Executive's termination date occurs that the Executive remained employed by the Company and the denominator of which is 365 (such amount, the "Pro Rata Bonus"); and (iii) provided the Executive is eligible for and timely elects to continue receiving group medical insurance pursuant to the "COBRA" law, continue to pay for twelve (12) months following the Executive's termination date or until the Executive has secured other employment or is no longer eligible for coverage under COBRA, whichever occurs first, the share of the premium for health coverage that is paid by the Company for active and similarly-situated employees who receive the same type of coverage, unless the Company's provision of such COBRA payments will violate the nondiscrimination requirements of applicable law, in which case this benefit will not apply (collectively, the "Severance Benefits").

(c) *Termination by the Company Without Cause or by the Executive With Good Reason Within Three Months Prior to or Twelve Months Following a Change in Control.* If the Executive's employment is terminated by the Company without Cause or by the Executive with Good Reason within the period that begins three (3) months prior to and ends twelve (12) months following a Change in Control, then the Executive shall be entitled to the Accrued Obligations. In addition, and subject to Exhibit A and the conditions of Section 8(d), the Company shall: (i) pay to the Executive, in a single lump sum on the Payment Date, an amount equal to the sum of (x) eighteen (18) months of the Executive's Base Salary, and (y) one hundred fifty percent (150%) of the Executive's Target Bonus for the year in which termination occurs or, if higher, the Executive's Target Bonus immediately prior to the Change in Control, (ii) pay to the Executive, in a single lump sum on the Payment Date, the Pro Rata Bonus which Pro Rata Bonus, shall, for the avoidance of doubt, be determined by reference to the Executive's Target Bonus for the year in which termination occurs, or, if higher, the Executive's Target Bonus immediately prior to the Change in Control, (iii) provided the Executive is eligible for and timely elects to continue receiving group medical insurance pursuant to the "COBRA" law, continue to pay for eighteen (18) months following the Executive's termination date or until the Executive has secured other employment or is no longer eligible for coverage under COBRA, whichever occurs first, the share of the premium for health coverage that is paid by the Company for active and similarly-situated employees who receive the same type of coverage, unless the Company's provision of such COBRA payments will violate the nondiscrimination requirements of applicable law, in which case this benefit will not apply, and (iv) provide that the vesting of the Executive's then-unvested equity awards that vest based solely on the passage of time shall be accelerated, such that all such then-unvested time-based equity awards shall vest and become fully exercisable or non-forfeitable as of the later of the date of the Change in Control and the Executive's termination date (collectively, the "Change in Control Severance Benefits").

(d) *Release*. As a condition of the Executive's receipt of the Severance Benefits or the Change in Control Severance Benefits, as applicable, the Executive must execute and deliver to the Company a separation and release of claims agreement in substantially the form attached hereto as Exhibit B (the "Release"), which Release must become irrevocable within sixty (60) days following the date of the Executive's termination of employment (or such shorter period as may be directed by the Company). The Severance Benefits or the Change in Control Severance Benefits, as applicable, will be paid or commence to be paid in the first regular payroll beginning after the Release becomes effective, provided that if the foregoing sixty (60) day period would end in a calendar year subsequent to the year in which the Executive's employment ends, the Severance Benefits or Change in Control Severance Benefits, as applicable, will not be paid or begin to be paid before the first payroll of the subsequent calendar year (the date the Severance Benefits or Change in Control Severance Benefits, as applicable, are paid or commence pursuant to this sentence, the "Payment Date"). The Executive must continue to comply with all post-employment obligations under law or in any agreement between the Executive and the Company, including the Restrictive Covenant Agreements, any similar agreement with the Company and as set forth in the Release in order to be eligible to receive or continue receiving the Severance Benefits or Change in Control Severance Benefits, as applicable. For the avoidance of doubt, if the Executive's employment is terminated by the Company without Cause or by the Executive with Good Reason prior to a Change in Control, (i) any then-outstanding and unvested time-based equity awards held by the Executive shall remain outstanding (but any vesting shall be suspended) for up to (but no longer than) three (3) months following the date of termination so that, if it is later determined that such termination occurred during the three (3)-month period prior to the closing of a Change in Control and the Executive is entitled to Change in Control acceleration and/or Change in Control Severance Benefits rather than Severance Benefits, the vesting of such awards may be accelerated, in accordance with Section 8(c), immediately prior to the closing of the Change in Control and (ii) any Change in Control Severance Benefits shall be reduced by any Severance Benefits previously paid to the Executive, if it is later determined that the termination occurred during the three (3)-month period prior to the closing of a Change in Control and that the Executive is entitled to Change in Control Severance Benefits rather than Severance Benefits.

(e) *Change in Control Definition*. For purposes of this Agreement, "Change in Control" shall mean the occurrence of any of the following events, provided that such event or occurrence constitutes a change in the ownership or effective control of the Company, or a change in the ownership of a substantial portion of the assets of the Company, as defined in Treasury Regulation §§ 1.409A-3(i)(5)(v), (vi) and (vii): (i) the acquisition by an individual, entity or group (within the meaning of Section 13(d)(3) or 14(d)(2) of the Securities Exchange Act of 1934 (the "Exchange Act")) (a "Person") of beneficial ownership of any capital stock of the Company if, after such acquisition, such Person beneficially owns (within the meaning of Rule 13d-3 under the Exchange Act) fifty percent (50%) or more of either (x) the then-outstanding shares of common stock of the Company (the "Outstanding Company Common Stock") or (y) the combined voting power of the then-outstanding securities of the Company entitled to vote generally in the election of directors (the "Outstanding Company Voting Securities"); provided, however, that for purposes of this subsection (i), the following acquisitions shall not constitute a Change in Control: (1) any acquisition directly from the Company or (2) any acquisition by any entity pursuant to a Business Combination (as defined below) which complies with clauses (x) and (y) of subsection (iii) of this definition; or (ii) a change in the composition of the Board that results in the Continuing Directors (as defined below) no longer constituting a majority of the Board (or, if applicable, the Board of Directors of a successor corporation to the Company), where the term "Continuing Director" means at any date a member of the Board (x) who was a member of the Board on the Effective Date or (y) who was nominated or elected subsequent to such date by at least a majority of the directors who were Continuing Directors at the time of such nomination or election or whose election to the Board was recommended or endorsed by at least a majority of the directors who were Continuing Directors at the time of such nomination or election; provided, however, that there shall be excluded from this clause (y) any individual whose initial assumption of office occurred as a result of an actual or threatened election contest with respect to the election or removal of directors or other actual or threatened solicitation of proxies or consents, by or on behalf of a person other than the Board; or (iii) the consummation of a merger, consolidation, reorganization, recapitalization or share exchange involving the Company, or a sale or other disposition of all or substantially all of the assets of the Company (a "Business Combination"), unless, immediately following such Business Combination, each of the following two (2) conditions is satisfied: (x) all or substantially all of the individuals and entities who were the beneficial owners of the Outstanding Company Common Stock and Outstanding Company Voting Securities immediately prior to such Business Combination beneficially own, directly or indirectly, more than fifty percent (50%) of the then-outstanding shares of common stock and the combined voting power of the then-outstanding securities entitled to vote generally in the election of directors, respectively, of the resulting or acquiring corporation in such Business Combination (which shall include, without limitation, a corporation which as a result of such transaction owns the Company or substantially all of the Company's assets either directly or through one (1) or more subsidiaries) (such resulting or acquiring corporation is referred to herein as the "Acquiring Corporation") in substantially the same proportions as their ownership of the Outstanding Company Common Stock and Outstanding Company Voting Securities, respectively, immediately prior to such Business Combination and (y) no Person (excluding any employee benefit plan (or related trust) maintained or sponsored by the Company or by the Acquiring Corporation) beneficially owns, directly or indirectly, fifty percent (50%) or more of the then-outstanding shares of common stock of the Acquiring Corporation, or of the combined voting power of the then-outstanding securities of such corporation entitled to vote generally in the election of directors (except to the extent that such ownership existed prior to the Business Combination); or (iv) the liquidation or dissolution of the Company.

(f) *Resignation from other Positions*. If, as of the date that the Executive's employment terminates for any reason, the Executive is a member of the Board (or the board of directors of any entity affiliated with the Company), or hold any other offices or positions with the Company (or any entity affiliated with the Company), the Executive shall, unless otherwise requested by the Company, immediately relinquish and/or resign from any such board memberships, offices and positions as of the date the Executive's employment terminates. The Executive agrees to execute such documents and take such other actions as the Company may request to reflect such relinquishments and/or resignation(s).

9. *Absence of Restrictions*. The Executive represents and warrants that the Executive is not bound by any employment contracts, restrictive covenants or other restrictions that prevent (or purports to prevent) the Executive from carrying out the Executive's responsibilities for the Company, or which are in any way inconsistent with any of the terms of this Agreement.

10. *Notice*. Any notice delivered under this Agreement shall be deemed duly delivered three (3) business days after it is sent by registered or certified mail, return receipt requested, postage prepaid, one (1) business day after it is sent for next-business day delivery via a reputable nationwide overnight courier service, or immediately upon hand delivery, in each case to the address of the recipient set forth below.

To Executive:

At the address set forth in the Executive's personnel file

To Company:

Carisma Therapeutics Inc.
3675 Market Street, Suite 200
Philadelphia, Pennsylvania 19104

Either Party may change the address to which notices are to be delivered by giving notice of such change to the other Party in the manner set forth in this Section 10.

11. *Applicable Law and Forum*. This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania (without reference to the conflict of laws provisions thereof). Any action, suit or other legal proceeding arising under or relating to any provision of this Agreement shall be commenced only in a court of the Commonwealth of Pennsylvania (or, if appropriate, a federal court located within the Commonwealth of Pennsylvania), and the Company and the Executive each consent to the exclusive jurisdiction of such a court. The Company and the Executive each hereby irrevocably waives any right to a trial by jury in any action, suit or other legal proceeding arising under or relating to any provision of this Agreement.

12. *Successors and Assigns*. This Agreement shall be binding upon and inure to the benefit of both Parties and their respective successors and assigns, including any corporation with which or into which the Company may be merged or which may succeed to its assets or business; provided, however, that the obligations of the Executive are personal and shall not be assigned by the Executive.

13. *At-Will Employment*. This Agreement shall not be construed as an agreement, either expressed or implied, to employ the Executive for any stated term, and shall in no way alter the Company's policy of employment at will, under which both the Executive and the Company remain free to terminate the employment relationship, with or without cause, at any time, with or without notice. Although the Executive's job duties, title, compensation and benefits, as well as the Company's personnel policies and procedures, may change from time to time, the "at-will" nature of the Executive's employment may only be changed by a written agreement signed by the Executive and a duly authorized representative of the Company, which written agreement expressly states the intention to modify the at-will nature of the Executive's employment, provided, however, that nothing in the foregoing shall alter any rights the Executive may have as set forth in Section 8 above. Similarly, nothing in this Agreement shall be construed as an agreement, either express or implied, to pay the Executive any compensation or grant the Executive any benefit beyond the end of the Executive's employment with the Company, except as explicitly set forth in Section 8 above.

14. *Acknowledgment*. The Executive states and represents that the Executive has had an opportunity to fully discuss and review the terms of this Agreement with an attorney. The Executive further states and represents that the Executive has carefully read this Agreement, understands the contents herein, freely and voluntarily assents to all of the terms and conditions hereof, and signs the Executive's name of the Executive's own free act.

15. *No Oral Modification, Waiver, Cancellation or Discharge*. This Agreement may be amended or modified only by a written instrument executed by both the Company and the Executive. No delay or omission by the Company in exercising any right under this Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

16. *Captions and Pronouns*. The captions of the sections of this Agreement are for convenience of reference only and in no way define, limit or affect the scope or substance of any section of this Agreement. Whenever the context may require, any pronouns used in this Agreement shall include the corresponding masculine, feminine or neuter forms, and the singular forms of nouns and pronouns shall include the plural, and vice versa.

17. *Interpretation*. The Parties agree that this Agreement will be construed without regard to any presumption or rule requiring construction or interpretation against the drafting Party. References in this Agreement to "include" or "including" should be read as though they said "without limitation" or equivalent forms. Except where the context requires otherwise, references in this Agreement to the "Board" shall include any authorized committee thereof.

18. *Severability*. Each provision of this Agreement must be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be prohibited by or invalid under applicable law, such provision will be ineffective only to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Agreement. Moreover, if a court of competent jurisdiction determines any of the provisions contained in this Agreement to be unenforceable because the provision is excessively broad in scope, whether as to duration, activity, geographic application, subject or otherwise, it will be construed, by limiting or reducing it to the extent legally permitted, so as to be enforceable to the extent compatible with then applicable law to achieve the intent of the Parties.

19. *Modified Section 280G Cutback*. Notwithstanding any other provision of this Agreement, except as set forth in Section 19(b), in the event that the Company undergoes a "Change in Ownership or Control" (as defined below), the following provisions shall apply:

(a) The Company shall not be obligated to provide to the Executive any portion of any "Contingent Compensation Payments" (as defined below) that the Executive would otherwise be entitled to receive to the extent necessary to eliminate any "excess parachute payments" (as defined in Section 280G(b)(1) of the Code) for the Executive. For purposes of this Section 19, the Contingent Compensation Payments so eliminated shall be referred to as the "Eliminated Payments" and the aggregate amount (determined in accordance with Treasury Regulation Section 1.280G-1, Q/A-30 or any successor provision) of the Contingent Compensation Payments so eliminated shall be referred to as the "Eliminated Amount."

(b) Notwithstanding the provisions of Section 19(a), no such reduction in Contingent Compensation Payments shall be made if (1) the Eliminated Amount (computed without regard to this sentence) exceeds (2) one hundred percent (100%) of the aggregate present value (determined in accordance with Treasury Regulation Section 1.280G-1, Q/A-31 and Q/A-32 or any successor provisions) of the amount of any additional taxes that would be incurred by the Executive if the Eliminated Payments (determined without regard to this sentence) were paid to the Executive (including state and federal income taxes on the Eliminated Payments, the excise tax imposed by Section 4999 of the Code payable with respect to all of the Contingent Compensation Payments in excess of the Executive's "base amount" (as defined in Section 280G(b)(3) of the Code), and any withholding taxes). The override of such reduction in Contingent Compensation Payments pursuant to this Section 19(b) shall be referred to as a "Section 19(b) Override." For purpose of this paragraph, if any federal or state income taxes would be attributable to the receipt of any Eliminated Payment, the amount of such taxes shall be computed by multiplying the amount of the Eliminated Payment by the maximum combined federal and state income tax rate provided by law.

(c) For purposes of this Section 19 the following terms shall have the following respective meanings:

(i) "Change in Ownership or Control" shall mean a change in the ownership or effective control of the Company or in the ownership of a substantial portion of the assets of the Company determined in accordance with Section 280G(b)(2) of the Code.

(ii) "Contingent Compensation Payment" shall mean any payment (or benefit) in the nature of compensation that is made or made available (under this Agreement or otherwise) to or for the benefit of a "disqualified individual" (as defined in Section 280G(c) of the Code) and that is contingent (within the meaning of Section 280G(b)(2)(A)(i) of the Code) on a Change in Ownership or Control of the Company.

(d) Any payments or other benefits otherwise due to the Executive following a Change in Ownership or Control that could reasonably be characterized (as determined by the Company) as Contingent Compensation Payments (the "Potential Payments") shall not be made until the dates provided for in this Section 19(d). Within thirty (30) days after each date on which the Executive first becomes entitled to receive (whether or not then due) a Contingent Compensation Payment relating to such Change in Ownership or Control, the Company shall determine and notify the Executive (with reasonable detail regarding the basis for its determinations) (1) which Potential Payments constitute Contingent Compensation Payments, (2) the Eliminated Amount and (3) whether the Section 19(b) Override is applicable. Within thirty (30) days after delivery of such notice to the Executive, the Executive shall deliver a response to the Company (the "Executive Response") stating either (A) that the Executive agrees with the Company's determination pursuant to the preceding sentence or (B) that the Executive disagrees with such determination, in which case the Executive shall set forth (x) which Potential Payments should be characterized as Contingent Compensation Payments, (y) the Eliminated Amount, and (z) whether the Section 19(b) Override is applicable. In the event that the Executive fails to deliver an Executive Response on or before the required date, the Company's initial determination shall be final. If and to the extent that any Contingent Compensation Payments are required to be treated as Eliminated Payments pursuant to this Section 19, then the payments shall be reduced or eliminated, as determined by the Company, in the following order: (i) any cash payments, (ii) any taxable benefits, (iii) any nontaxable benefits, and (iv) any vesting of equity awards in each case in reverse order beginning with payments or benefits that are to be paid the farthest in time from the date that triggers the applicability of the excise tax, to the extent necessary to maximize the Eliminated Payments. If the Executive states in the Executive Response that the Executive agrees with the Company's determination, the Company shall make the Potential Payments to the Executive within three (3) business days following delivery to the Company of the Executive Response (except for any Potential Payments which are not due to be made until after such date, which Potential Payments shall be made on the date on which they are due). If the Executive states in the Executive Response that the Executive disagrees with the Company's determination, then, for a period of sixty (60) days following delivery of the Executive Response, the Executive and the Company shall use good faith efforts to resolve such dispute. If such dispute is not resolved within such 60-day period, such dispute shall be settled exclusively by arbitration as provided in Section 11 of this Agreement. The Company shall, within three (3) business days following delivery to the Company of the Executive Response, make to the Executive those Potential Payments as to which there is no dispute between the Company and the Executive regarding whether they should be made (except for any such Potential Payments which are not due to be made until after such date, which Potential Payments shall be made on the date on which they are due). The balance of the Potential Payments shall be made within three (3) business days following the resolution of such dispute.

The provisions of this Section 19 are intended to apply to any and all payments or benefits available to the Executive under this Agreement or any other agreement or plan under which the Executive may receive Contingent Compensation Payments.

20. *Entire Agreement*. Except as expressly provided in the Merger Agreement and any other agreements to which the Executive is or will be party in connection with the Transaction, this Agreement constitutes the entire agreement between the Parties and supersedes and replaces all prior agreements and understandings, whether written or oral, relating to the subject matter of this Agreement, including, without limitation, the Prior Agreement; provided, however, and for the avoidance of doubt, nothing herein shall be deemed to supersede the Restrictive Covenant Agreements, which remain in full force and effect as set forth in Section 6 above.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the day and year set forth above.

Carisma Therapeutics Inc.

By: /s/ Richard Morris
Name: Richard Morris
Title: Chief Financial Officer

EXECUTIVE:

/s/ Steven Kelly
Steven Kelly

SCHEDULE 1

Service as a non-employee member on the board of directors of Artelo Biosciences, Inc. in a non-operating capacity.

EXHIBIT A

Payments Subject to Section 409A

1. Subject to this Exhibit A, any severance payments or benefits that may be due under the Agreement shall begin only upon the date of the Executive's "separation from service" (determined as set forth below) which occurs on or after the termination of the Executive's employment. The following rules shall apply with respect to distribution of the severance payments or benefits, if any, to be provided to the Executive under the Agreement, as applicable:

(a) It is intended that each installment of the severance payments or benefits provided under the Agreement shall be treated as a separate "payment" for purposes of Section 409A of the Internal Revenue Code ("Section 409A"). Neither the Company nor the Executive shall have the right to accelerate or defer the delivery of any such payments or benefits except to the extent specifically permitted or required by Section 409A.

(b) If, as of the date of the Executive's "separation from service" from the Company, the Executive is not a "specified employee" (within the meaning of Section 409A), then each installment of the severance payments or benefits shall be made on the dates and terms set forth in the letter agreement.

(c) If, as of the date of the Executive's "separation from service" from the Company, the Executive is a "specified employee" (within the meaning of Section 409A), then:

(i) Each installment of the severance payments or benefits due under the Agreement that, in accordance with the dates and terms set forth herein, will in all circumstances, regardless of when the Executive's separation from service occurs, be paid within the short-term deferral period (as defined under Section 409A) shall be treated as a short-term deferral within the meaning of Treasury Regulation Section 1.409A-1(b)(4) to the maximum extent permissible under Section 409A and shall be paid on the dates and terms set forth in the Agreement; and

(ii) Each installment of the severance payments or benefits due under the Agreement that is not described in this Exhibit A, Section 1(c)(i) and that would, absent this subsection, be paid within the six (6)-month period following the Executive's "separation from service" from the Company shall not be paid until the date that is six (6) months and one day after such separation from service (or, if earlier, the Executive's death), with any such installments that are required to be delayed being accumulated during the six (6)-month period and paid in a lump sum on the date that is six months and one day following the Executive's separation from service and any subsequent installments, if any, being paid in accordance with the dates and terms set forth herein; provided, however, that the preceding provisions of this sentence shall not apply to any installment of payments or benefits if and to the maximum extent that that such installment is deemed to be paid under a separation pay plan that does not provide for a deferral of compensation by reason of the application of Treasury Regulation 1.409A-1(b)(9)(iii) (relating to separation pay upon an involuntary separation from service). Any installments that qualify for the exception under Treasury Regulation Section 1.409A-1(b)(9)(iii) must be paid no later than the last day of the Executive's second taxable year following the taxable year in which the separation from service occurs.

2. The determination of whether and when the Executive's separation from service from the Company has occurred shall be made and in a manner consistent with, and based on the presumptions set forth in, Treasury Regulation Section 1.409A-1(h). Solely for purposes of Section 2 of this Exhibit A, "Company" shall include all persons with whom the Company would be considered a single employer under Section 414(b) and 414(c) of the Code.

3. All reimbursements and in-kind benefits provided under the Agreement shall be made or provided in accordance with the requirements of Section 409A to the extent that such reimbursements or in-kind benefits are subject to Section 409A, including, where applicable, the requirements that (i) any reimbursement is for expenses incurred during the Executive's lifetime (or during a shorter period of time specified in the Agreement), (ii) the amount of expenses eligible for reimbursement during a calendar year may not affect the expenses eligible for reimbursement in any other calendar year, (iii) the reimbursement of an eligible expense will be made on or before the last day of the calendar year following the year in which the expense is incurred and (iv) the right to reimbursement is not subject to set off or liquidation or exchange for any other benefit.

4. The Company makes no representation or warranty and shall have no liability to the Executive or to any other person if any of the provisions of the Agreement (including this Exhibit A) are determined to constitute deferred compensation subject to Section 409A but that do not satisfy an exemption from, or the conditions of, that section.

5. The Agreement is intended to comply with, or be exempt from, Section 409A and shall be interpreted accordingly.

[Remainder of page intentionally left blank.]

EXHIBIT B[1]

Sample Separation and Release Agreement

[Insert Date]
[Insert Name]

Dear **[Insert Name]**:

In connection with the termination of your employment with [Carisma Therapeutics Inc.] (the "Company") on **[Separation Date]**, you are eligible to receive [Severance Benefits] [Change in Control Severance Benefits] as described in Section 8 of the employment agreement executed between you and the Company dated _____ (the "Employment Agreement") if you sign and return this letter agreement to me by **[Return Date –7/21/45 days from date of receipt of this letter agreement] [and it becomes binding between you and the Company**]. By signing and returning this letter agreement [**and not revoking your acceptance]**, you will be agreeing to the terms and conditions set forth in the numbered paragraphs below, including the release of claims set forth in paragraph 2. Therefore, you are advised to consult with an attorney before signing this letter agreement and you have been given at least [**seven/twenty-one (21)/forty-five (45)]**[2] days to do so. [**If you sign this letter agreement, you may change your mind and revoke your agreement during the seven (7) day period after you have signed it (the "Revocation Period") by notifying me in writing. If you do not so revoke, this letter agreement will become a binding agreement between you and the Company upon the expiration of the Revocation Period.]**

Although your receipt of the [Severance Benefits] [Change in Control Severance Benefits] is expressly conditioned on your entering into this letter agreement, the following will apply regardless of whether or not you do so:

- As of the Separation Date, all salary payments from the Company will cease and any benefits you had as of the Separation Date under Company-provided benefit plans, programs, or practices will terminate, except as required by federal or state law.

- You will receive payment for your final wages and any unused vacation time accrued through the Separation Date.

- You may, if eligible and at your own cost, elect to continue receiving group medical insurance pursuant to applicable "COBRA" law. Please consult the COBRA materials to be provided under separate cover for details regarding these benefits.

- You are obligated to keep confidential and not to use or disclose any and all non-public information concerning the Company that you acquired during the course of your employment with the Company, including any non-public information concerning the Company's business affairs, business prospects, and financial condition, except as otherwise permitted by paragraph 9 below. Further, you remain subject to any and all continuing confidentiality, non-competition and/or non-solicitation obligations that you may have pursuant to any previous agreement with the Company, including, as may be applicable and without limitation, the Employment Agreement and the Invention and Non-Disclosure Agreement and Non-Competition and Non-Solicitation Agreement (the "Restrictive Covenant Agreements") referenced therein.

- You must return to the Company no later than the Separation Date all Company property.

[1] Note: The Company may revise this release agreement in its sole discretion to reflect changes in law, additional statutes or claims, benefits, or employee's circumstances, so that the Company receives the benefit of the most complete release of claims that is legally permissible (without releasing employee's right to receive the Severance Benefits), and the Company may also change the timing, if required to obtain such release. This footnote and the other footnotes herein are part of the form of release and are to be removed only when the Company finalizes the letter agreement for execution.

[2] Consideration period depends upon circumstances of separation.

If you elect to timely sign and return this letter agreement, comply with all of your obligations hereunder, and do not revoke your acceptance in writing within the Revocation Period, the following numbered paragraphs set forth the terms and conditions that will also apply:

1. **Severance Benefits** The Company will provide you with the [as may be applicable [Severance Benefits] or [Change in Control Severance Benefits]] set forth in Section 8 of the Employment Agreement (the ["Severance Benefits"] ["Change in Control Severance Benefits"]), **s**ubject to and in accordance with the terms and conditions thereof.

2. **Release** – In consideration of the [Severance Benefits] [Change in Control Severance Benefits], which you acknowledge you would not otherwise be entitled to receive, you hereby fully, forever, irrevocably and unconditionally release, remise and discharge the Company, its affiliates, subsidiaries, parent companies, predecessors, and successors, and all of their respective past and present officers, directors, stockholders, partners, members, managers, employees, agents, representatives, plan administrators, attorneys, insurers and fiduciaries (each in their individual and corporate capacities) (collectively, the "Released Parties") from any and all claims, charges, complaints, demands, actions, causes of action, suits, rights, debts, sums of money, costs, accounts, reckonings, covenants, contracts, agreements, promises, doings, omissions, damages, executions, obligations, liabilities, and expenses (including attorneys' fees and costs), of every kind and nature that you ever had or now have against any or all of the Released Parties, whether known or unknown, including, but not limited to, any and all claims arising out of or relating to your employment with and/or separation from the Company, including, but not limited to, all claims under Title VII of the Civil Rights Act of 1964, 42 U.S.C. § 2000e et seq., the Americans With Disabilities Act of 1990, 42 U.S.C. § 12101 et seq., **[the Age Discrimination in Employment Act, 29 U.S.C. § 621 et seq.,]** the Genetic Information Nondiscrimination Act of 2008, 42 U.S.C. § 2000ff et seq., the Family and Medical Leave Act, 29 U.S.C. § 2601 et seq., the Worker Adjustment and Retraining Notification Act ("WARN"), 29 U.S.C. § 2101 et seq., the Rehabilitation Act of 1973, 29 U.S.C. § 701 et seq., Executive Order 11246, Executive Order 11141, the Fair Credit Reporting Act, 15 U.S.C. § 1681 et seq., and the Employee Retirement Income Security Act of 1974 ("ERISA"), 29 U.S.C. § 1001 et seq., all as amended; all claims arising out of the Pennsylvania Human Relations Act, 43 Pa. Stat. § 951 et seq., the Pennsylvania Equal Pay Law, 43 Pa. Stat. § 336.1 et seq., the Pennsylvania Wage Payment and Collection Law, 43 Pa. Stat. § 251 et seq., and the Pennsylvania Whistleblower Law, 43 Pa. Stat. § 1421 et seq., all as amended; **[Insert any other applicable federal, state and local citations at the time of termination;]** all common law claims including, but not limited to, actions in defamation, intentional infliction of emotional distress, misrepresentation, fraud, wrongful discharge, and breach of contract (including, without limitation, all claims arising out of or relating to the Employment Agreement); all claims to any ownership interest in the Company, contractual or otherwise; all state and federal whistleblower claims to the maximum extent permitted by law; and any claim or damage arising out of your employment with and/or separation from the Company (including a claim for retaliation) under any common law theory or any federal, state or local statute or ordinance not expressly referenced above; provided, however, that nothing in this letter agreement: (i) prevents you from filing a charge with, cooperating with, or participating in any investigation or proceeding before, the Equal Employment Opportunity Commission or a state fair employment practices agency (except that you acknowledge that you may not recover any monetary benefits in connection with any such charge, investigation, or proceeding, and you further waive any rights or claims to any payment, benefit, attorneys' fees or other remedial relief in connection with any such charge, investigation or proceeding), (ii) deprives you of any accrued benefits to which you have acquired a vested right under any employee benefit plan or policy, stock plan or deferred compensation arrangement, any health care continuation to the extent required by applicable law or any agreement, or any right to severance benefits or any other benefits due to you upon termination of employment that you may have under the Employment Agreement; or (iii) deprives you of any rights you may have to be indemnified by the Company as provided in any agreement between the Company and you, or pursuant to the Company's Certificate of Incorporation or by-laws (recognizing that such indemnification is not guaranteed by this letter agreement and shall be governed by the instrument, if any, providing for such indemnification).

3. **Continuing Obligations** – You acknowledge and reaffirm your confidentiality and nondisclosure obligations discussed above, as well as any and all confidentiality, non-competition, nonsolicitation obligations and/or assignment of inventions set forth in any previous agreement you may have with the Company (including without limitation the Employment Agreement and the Restrictive Covenants Agreements referenced therein), which survive your separation from employment with the Company.

4. **Non-Disparagement** – You understand and agree that, to the extent permitted by law and except as otherwise permitted by paragraph 9 below, you will not, in public or private, make any false, disparaging, derogatory or defamatory statements, online (including, without limitation, on any social media, networking, or employer review site) or otherwise, to any person or entity, including, but not limited to, any media outlet, industry group, financial institution or current or former employee, board member, consultant, client or customer of the Company, regarding the Company or any of the other Released Parties, or regarding the Company's business affairs, business prospects, or financial condition.

5. **Cooperation** – You agree that, to the extent permitted by law, you shall cooperate fully with the Company in: (i) any internal investigation; (ii) any investigation, defense or prosecution of any claims or actions which already have been brought, are currently pending, or which may be brought in the future against the Company by a third party or by or on behalf of the Company against any third party, whether before a state or federal court, any state or federal government agency, or a mediator or arbitrator; or (iii) any other administrative, regulatory, or judicial inquiry, investigation, proceeding or arbitration. Your full cooperation hereunder shall include, but not be limited to, making yourself available to the Company upon reasonable notice for interviews and factual investigations; appearing at the Company's request to give testimony without requiring service of a subpoena or other legal process; volunteering to the Company pertinent information; and turning over all relevant documents which are in or may come into your possession. The term "cooperation" does not mean that you must provide information that is favorable to the Company; it means only that you will provide truthful information within your knowledge and possession upon request of the Company. The Company will reimburse you for all reasonable and documented out-of-pocket expenses that you incur at the Company's request to comply with this paragraph. You further agree that, to the extent permitted by law, you will notify the Company promptly in the event that you are served with a subpoena (other than a subpoena issued by a government agency), or in the event that you are asked to provide a third party (other than a government agency) with information concerning any actual or potential complaint or claim against the Company.

6. **Return of Company Property** – You confirm that you have returned to the Company all keys, files, records (and copies thereof), equipment (including, but not limited to, computer hardware, software, printers, flash drives and other storage devices, wireless handheld devices, cellular phones, tablets, etc.), Company identification, and any other Company owned property in your possession or control, and that you have left intact all, and have otherwise not destroyed, deleted, or made inaccessible to the Company any, electronic Company documents, including, but not limited to, those that you developed or helped to develop during your employment, and that you have not (a) retained any copies in any form or media; (b) maintained access to any copies in any form, media, or location; (c) stored any copies in any physical or electronic locations that are not readily accessible or not known to the Company or that remain accessible to you; or (d) sent, given, or made accessible any copies to any persons or entities that the Company has not authorized to receive such electronic or hard copies. You further confirm that you have cancelled all accounts for your benefit, if any, in the Company's name, including but not limited to, credit cards, telephone charge cards, cellular phone accounts, and computer accounts.

7. **Business Expenses and Final Compensation** – You acknowledge that you have been reimbursed by the Company for all business expenses incurred in conjunction with the performance of your employment and that no other reimbursements are owed to you. You further acknowledge that you have received payment in full for all services rendered in conjunction with your employment by the Company, including payment for all wages, bonuses, and accrued, unused vacation time, and that no other compensation is owed to you except as provided herein.

8. **Confidentiality** – You understand and agree that, to the extent permitted by law and except as otherwise permitted by paragraph 9 below, the terms and contents of this letter agreement, and the contents of the negotiations and discussions resulting in this letter agreement, shall be maintained as confidential by you and your agents and representatives and shall not be disclosed except as otherwise agreed to in writing by the Company.

9. **Scope of Disclosure Restrictions** – Nothing in this letter agreement or elsewhere prohibits you from communicating with government agencies about possible violations of federal, state, or local laws or otherwise providing information to government agencies, filing a complaint with government agencies, or participating in government agency investigations or proceedings. You are not required to notify the Company of any such communications; provided, however, that nothing herein authorizes the disclosure of information you obtained through a communication that was subject to the attorney-client privilege. Further, notwithstanding your confidentiality and nondisclosure obligations, you are hereby advised as follows pursuant to the Defend Trade Secrets Act: "An individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that (A) is made (i) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual (A) files any document containing the trade secret under seal; and (B) does not disclose the trade secret, except pursuant to court order."

10. **Amendment and Waiver** – This letter agreement shall be binding upon the parties and may not be modified in any manner, except by an instrument in writing of concurrent or subsequent date signed by duly authorized representatives of the parties hereto. This letter agreement is binding upon and shall inure to the benefit of the parties and their respective agents, assigns, heirs, executors, successors and administrators. No delay or omission by the Company in exercising any right under this letter agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

11. **Validity** – Should any provision of this letter agreement be declared or be determined by any court of competent jurisdiction to be illegal or invalid, the validity of the remaining parts, terms or provisions shall not be affected thereby and said illegal or invalid part, term or provision shall be deemed not to be a part of this letter agreement.

12. **Nature of Agreement –** You understand and agree that this letter agreement is a severance agreement and does not constitute an admission of liability or wrongdoing on the part of the Company.

13. **Acknowledgments –** You acknowledge that you have been given at least **[seven (7) / twenty-one (21) / forty-five (45)]** days to consider this letter agreement, and that the Company is hereby advising you to consult with an attorney of your own choosing prior to signing this letter agreement. **[You understand that you may revoke this letter agreement during the Revocation Period by notifying me in writing, and the letter agreement shall not be effective or enforceable until the expiration of the Revocation Period. You understand and agree that by entering into this letter agreement, you are waiving any and all rights or claims you might have under the Age Discrimination in Employment Act, as amended by the Older Workers Benefit Protection Act, and that you have received consideration beyond that to which you were previously entitled.]**

14. **[Eligibility for Severance Program – Attached to this letter agreement as Attachment A is a description of (i) any class, unit or group of individuals covered by the program of severance benefits which the Company has offered to you, and any applicable time limits regarding such severance benefit program; and (ii) the job title and ages of all individuals eligible or selected for such severance benefit program, and the ages of all individuals in the same job classification or organizational unit who are not eligible or who were not selected for such severance benefit program.]**

15. **Voluntary Assent** – You affirm that no other promises or agreements of any kind have been made to or with you by any person or entity whatsoever to cause you to sign this letter agreement, and that you fully understand the meaning and intent of this letter agreement. You state and represent that you have had an opportunity to fully discuss and review the terms of this letter agreement with an attorney. You further state and represent that you have carefully read this letter agreement, understand the contents herein, freely and voluntarily assent to all of the terms and conditions hereof, and sign your name of your own free act.

16. **Applicable Law** – This letter agreement shall be interpreted and construed by the laws of the Commonwealth of Pennsylvania, without regard to conflict of laws provisions. You hereby irrevocably submit to and acknowledge and recognize the jurisdiction of the courts of the Commonwealth of Pennsylvania, or if appropriate, a federal court located in the Commonwealth of Pennsylvania (which courts, for purposes of this letter agreement, are the only courts of competent jurisdiction), over any suit, action or other proceeding arising out of, under or in connection with this letter agreement or the subject matter hereof. You hereby irrevocably waive any right to a trial by jury in any action, suit or other legal proceeding arising under or relating to any provision of this letter agreement.

17. **Entire Agreement** – This letter agreement contains and constitutes the entire understanding and agreement between the parties hereto with respect to your severance benefits and the settlement of claims against the Company and cancels all previous oral and written negotiations, agreements, and commitments in connection therewith.

18. **Tax Acknowledgement** – In connection with the [Severance Benefits] [Change in Control Severance Benefits], the Company shall withhold and remit to the tax authorities the amounts required under applicable law, and you shall be responsible for all applicable taxes with respect to such [Severance Benefits] [Change in Control Severance Benefits] under applicable law. You acknowledge that you are not relying upon the advice or representation of the Company with respect to the tax treatment of the [Severance Benefits] [Change in Control Severance Benefits].

[Signature Page Follows]

If you have any questions about the matters covered in this letter agreement, please call me.

Very truly yours,

By: _____
[Name]
[Title]

I hereby agree to the terms and conditions set forth above. **[I have been given at least [twenty-one (21) / forty-five (45)] days to consider this letter agreement and I have chosen to execute this on the date below. I intend that this letter agreement will become a binding agreement between me and the Company if I do not revoke my acceptance during the Revocation Period.]**

_____
[Insert Name]

_____
Date

To be returned in a timely manner as set forth on the first page of this letter agreement, but not to be signed before the close of business on your last day of employment.[3]

[3] Note: All footnotes will be removed from the final execution version of this agreement.

Exhibit 10.8

Execution Copy

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT AGREEMENT (the "Agreement"), is made as of March 7, 2023 (the "Effective Date"), by and between Carisma Therapeutics Inc., a Delaware corporation (the "Company"), and Richard Morris (the "Executive") (together, the "Parties").

RECITALS

WHEREAS, the Executive has been employed by CTx Operations, Inc. (f/k/a CARISMA Therapeutics Inc.) (the "Carisma Sub") pursuant to that certain letter agreement dated March 15, 2021 detailing the terms and conditions of Executive's employment with the Carisma Sub (the "Prior Agreement");

WHEREAS, pursuant to that certain Agreement and Plan of Merger and Reorganization dated September 20, 2022 and amended on December 29, 2022 and February 13, 2023 (the "Merger Agreement"), by and among the Company (f/k/a Sesen Bio, Inc.), Seahawk Merger Sub, Inc., a Delaware corporation and wholly-owned subsidiary of the Company ("Merger Sub"), and the Carisma Sub, Merger Sub merged with and into Carisma Sub, with Carisma Sub continuing as a wholly-owned subsidiary of the Company and the surviving corporation of the merger (the "Merger");

WHEREAS, the Parties desire to enter into an agreement whereby the Executive will be employed as Chief Financial Officer of the Company on the terms contained in this Agreement; and

WHEREAS, the Executive has agreed to accept such employment with the Company on the terms and conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the foregoing and of the respective covenants and agreements of the Parties herein contained, the Parties hereto agree to the following terms, which shall govern the Executive's employment from and after the Effective Date:

1. *Agreement*. This Agreement shall be effective as of the Effective Date. The Executive's employment on the terms contained in this Agreement shall commence on the Effective Date and shall continue until such employment relationship is terminated in accordance with Section 7 hereof (the "Term of Employment").

2. *Position*. During the Term of Employment, the Executive shall serve as the Chief Financial Officer of the Company, working out of the Company's office in Philadelphia, Pennsylvania, and travelling as reasonably required by the Executive's job duties.

3. *Scope of Employment*. During the Term of Employment, the Executive shall be responsible for the performance of those duties consistent with the Executive's position as Chief Financial Officer. The Executive shall report to the Chief Executive Officer of the Company or his/her designee. The Executive agrees to devote the Executive's full business time, best efforts, skill, knowledge, attention, and energies to the advancement of the Company's business and interests and to the performance of the Executive's duties and responsibilities as an employee of the Company and not to engage in any other business activities (whether as an employee, consultant, board member, advisor or in any other capacity) without prior approval from the Company, except the Executive may engage in charitable or civic activities and/or serve as an executor, trustee, or other similar fiduciary capacity, provided, however, that in no event may any activity be undertaken or continued if it would (i) be in violation of any provision of this Agreement or other agreement between the Executive and the Company, (ii) interfere with the performance of the Executive's duties for the Company, or (iii) present a conflict of interest with the Company's business interests. As an employee of the Company, the Executive will be required to comply with all Company policies and procedures. Violations of the Company's policies may lead to immediate termination of the Executive's employment, provided, however, that nothing in the foregoing shall alter any rights the Executive may have as set forth in Section 8 below. Further, the Company's premises, including all workspaces, furniture, documents, and other tangible materials, and all information technology resources of the Company (including computers, data and other electronic files, and all internet and email) are subject to oversight and inspection by the Company at any time. Company employees should have no expectation of privacy with regard to any Company premises, materials, resources, or information.

4. *Compensation*. As full compensation for all services rendered by the Executive to the Company and any affiliate thereof, during the Term of Employment, the Company will provide to the Executive the following:

(a) *Base Salary*. The Executive shall receive a base salary, effective as of January 1, 2023, at the annualized rate of $467,000 (the "Base Salary"). For the avoidance of doubt, to the extent Executive is entitled to additional base salary for the period between January 1, 2023 and the Effective Date after taking into account any payments of base salary made by Carisma Sub to the Executive prior to the Effective Date, such payments will be made in the first payroll following the Effective Date. Otherwise, the Executive's Base Salary shall be paid in equal installments in accordance with the Company's regularly established payroll procedures. The Executive's Base Salary will be reviewed on an annual or more frequent basis by the Company's board of directors (the "Board") and is subject to change in the discretion of the Board.

(b) *Annual Discretionary Bonus*. The Executive will be eligible to receive an annual discretionary performance bonus of 40% of the Executive's Base Salary (the "Target Bonus"), based on the Board's assessment of the Executive's performance and the Company's attainment of targeted goals to be set by the Board in its sole discretion. Following the close of each calendar year, the Board will determine whether the Executive has earned a performance bonus, and the amount of any performance bonus, based on the set criteria. No amount of the performance bonus is guaranteed, and the Executive must be an active employee of the Company on the date the bonus is distributed in order to be eligible for and to earn any bonus award, as it also serves as an incentive for the Executive to remain employed by the Company. The Executive's bonus eligibility will be reviewed on an annual or more frequent basis by the Board and is subject to change in the discretion of the Board.

(c) *Equity Award*. The Executive will be eligible to receive equity awards, if any, at such times and on such terms and conditions as the Board shall, in its sole discretion, determine.

(d) *Paid Time Off*. The Executive will be eligible for a maximum of twenty-five (25) days of paid time off ("PTO") per calendar year to be taken at such times as may be approved by the Company. The number of PTO days for which the Executive is eligible shall accrue at the rate of 2.083 days per month that the Executive is employed during such calendar year. Any unused PTO time will be forfeited at the end of each calendar year.

(e) *Benefits*. Subject to eligibility requirements and the Company's polices, the Executive shall have the right, on the same basis as other similarly-situated employees of the Company, to participate in, and to receive benefits under, all employee health, disability, insurance, fringe, welfare benefit and retirement plans, arrangements, practices and programs the Company provides to its senior executives in accordance with the terms thereof as in effect from time to time. The Company reserves the right to modify, amend and/or terminate any and all of its benefits plans at is discretion.

(f) *Withholdings*. All compensation payable to the Executive shall be subject to applicable taxes and withholdings.

5. *Expenses*. The Executive will be reimbursed for the Executive's actual, necessary and reasonable business expenses pursuant to Company policy, subject to the provisions of Section 3 of Exhibit A attached hereto.

6. *Restrictive Covenants Agreements*. The Executive hereby acknowledges that each of the Invention and Non-Disclosure Agreement and the Non-Competition and Non-Solicitation Agreement that the Executive previously executed in connection with the Executive's employment with the Carisma Sub (together, the "Restrictive Covenant Agreements") remain in full force and effect, with the terms thereof hereby deemed incorporated herein; provided, however, that the references therein to "Company" shall be deemed hereinafter to mean the Company, as well as the Carisma Sub. The Executive further acknowledges that the Executive's employment with the Company is conditioned on the Executive's continued compliance with the Restrictive Covenant Agreements.

7. *Employment Termination*. This Agreement and the employment of the Executive shall terminate upon the occurrence of any of the following:

(a) Upon the death of the Executive or at the election of the Company due to the Executive's "Disability". As used in this Agreement, the term "Disability" shall mean a physical or mental illness or disability that prevents the Executive from performing the duties of the Executive's position for a period of more than any three (3) consecutive months or for periods aggregating more than twenty-six (26) weeks. The Company shall determine in good faith and in its sole discretion whether the Executive is unable to perform the services provided for herein.

(b) At the election of the Company, with or without "Cause" (as defined below), immediately upon written notice by the Company to the Executive. As used in this Agreement, "Cause" shall mean:

(i) the Executive's engagement in any conduct that has materially and adversely affected, or is reasonably likely to materially and adversely affect, the business interests or reputation of the Company (for avoidance of doubt, "conduct" in this subsection does not mean poor performance or failure to meet Company objectives);

(ii) any breach by the Executive of the Restrictive Covenant Agreements;

(iii) the Executive's willful and repeated failure to perform in any material respect, the Executive's duties to the Company under this Agreement;

(iv) the Executive's fraud or embezzlement, or the Executive's willful misconduct with respect to the Company;

(v) the Executive's material breach of this Agreement; or

(vi) the Executive's conviction of, or plea of guilty or *nolo contendere* to, a misdemeanor relating to the Company, any crime involving dishonesty or moral turpitude, or any felony;

provided however, that with respect to subsections (i), (ii) (iii) and (v) hereof, the Executive was given thirty (30) calendar days' written notice of such conduct, breach, or deficiencies and an opportunity to cure such conduct, breach or deficiencies but the Executive failed to do so within such period (provided that the Executive is eligible for no more than two "cure" opportunities during the Executive's employment).

(c) At the election of the Executive, with or without "Good Reason" (as defined below), upon written notice by the Executive to the Company (subject, if it is with Good Reason, to the timing provisions set forth in the definition of Good Reason). As used in this Agreement, "Good Reason" shall mean the occurrence (without the Executive's prior written consent), of any of the following events:

(i) a material reduction in the Executive's authority, duties, or responsibilities or a material reduction in the authority, duties or responsibilities of the person to whom the Executive reports;

(ii) the relocation of the principal place at which the Executive provides services to the Company by at least fifty (50) miles and to a location such that the Executive's daily commuting distance is increased;

(iii) a material reduction of the Executive's Base Salary; or

(iv) a material breach by the Company of its obligations under this letter Agreement.

No termination will be treated as a termination by the Executive for Good Reason unless (x) the Executive has given written notice to the Company of the Executive's intention to terminate the Executive's employment for Good Reason, describing the grounds for such action, no later than ninety (90) days after the first occurrence of such circumstances, (y) the Executive has provided the Company with at least thirty (30) days in which to cure the circumstances, and (z) if the Company is not successful in curing the circumstances, the Executive ends the Executive's employment within thirty (30) calendar days following the cure period in (y).

8. *Effect of Termination.*

(a) *All Terminations Other Than by the Company Without Cause or by the Executive With Good Reason*. If the Executive's employment is terminated under any circumstances other than a termination by the Company without Cause or a termination by the Executive with Good Reason (including a voluntary termination by the Executive without Good Reason or a termination by the Company for Cause or due to the Executive's death or Disability), the Company's obligations under this Agreement shall immediately cease and the Executive shall only be entitled to receive (i) the Base Salary that has accrued and to which the Executive is entitled as of the effective date of such termination, to be paid in accordance with the Company's established payroll procedure and applicable law but no later than the next regularly scheduled pay period, (ii) unreimbursed business expenses for which expenses the Executive has timely submitted appropriate documentation in accordance with Section 5 hereof, (iii) any amounts or benefits to which the Executive is then entitled under the terms of the benefit plans then-sponsored by the Company in accordance with their terms (and not accelerated to the extent acceleration does not satisfy Section 409A of the Internal Revenue Code of 1986, as amended, (the "Code")), and (iv) any accrued but unused vacation time through the date of termination, to be paid in accordance with Company policy and applicable law (the payments described in this sentence, the "Accrued Obligations").

(b) *Termination by the Company Without Cause or by the Executive With Good Reason More Than Three Months Prior to or More Than Twelve Months Following a Change in Control*. If the Executive's employment is terminated by the Company without Cause or by the Executive with Good Reason more than three (3) months prior to, or more than twelve (12) months following, a Change in Control (as defined below), the Executive shall be entitled to the Accrued Obligations. In addition, and subject to Exhibit A and the conditions of Section 8(d), the Company shall: (i) continue to pay to the Executive, in accordance with the Company's regularly established payroll procedures, the Executive's Base Salary for a period of twelve (12) months; (ii) pay to the Executive, in a single lump sum on the Payment Date (as defined below) an amount equal to one hundred percent (100%) of the Executive's Target Bonus for the year in which termination occurs, prorated based on a fraction, the numerator of which is the number of days during the calendar year in which the Executive's termination date occurs that the Executive remained employed by the Company and the denominator of which is 365 (such amount, the "Pro Rata Bonus"); and (iii) provided the Executive is eligible for and timely elects to continue receiving group medical insurance pursuant to the "COBRA" law, continue to pay for twelve (12) months following the Executive's termination date or until the Executive has secured other employment or is no longer eligible for coverage under COBRA, whichever occurs first, the share of the premium for health coverage that is paid by the Company for active and similarly-situated employees who receive the same type of coverage, unless the Company's provision of such COBRA payments will violate the nondiscrimination requirements of applicable law, in which case this benefit will not apply (collectively, the "Severance Benefits").

(c) *Termination by the Company Without Cause or by the Executive With Good Reason Within Three Months Prior to or Twelve Months Following a Change in Control*. If the Executive's employment is terminated by the Company without Cause or by the Executive with Good Reason within the period that begins three (3) months prior to and ends twelve (12) months following a Change in Control, then the Executive shall be entitled to the Accrued Obligations. In addition, and subject to Exhibit A and the conditions of Section 8(d), the Company shall: (i) pay to the Executive, in a single lump sum on the Payment Date, an amount equal to the sum of (x) twelve (12) months of the Executive's Base Salary, and (y) one hundred percent (100%) of the Executive's Target Bonus for the year in which termination occurs or, if higher, the Executive's Target Bonus immediately prior to the Change in Control, (ii) pay to the Executive, in a single lump sum on the Payment Date, the Pro Rata Bonus which Pro Rata Bonus, shall, for the avoidance of doubt, be determined by reference to the Executive's Target Bonus for the year in which termination occurs, or, if higher, the Executive's Target Bonus immediately prior to the Change in Control, (iii) provided the Executive is eligible for and timely elects to continue receiving group medical insurance pursuant to the "COBRA" law, continue to pay for twelve (12) months following the Executive's termination date or until the Executive has secured other employment or is no longer eligible for coverage under COBRA, whichever occurs first, the share of the premium for health coverage that is paid by the Company for active and similarly-situated employees who receive the same type of coverage, unless the Company's provision of such COBRA payments will violate the nondiscrimination requirements of applicable law, in which case this benefit will not apply, and (iv) provide that the vesting of the Executive's then-unvested equity awards that vest based solely on the passage of time shall be accelerated, such that all such then-unvested time-based equity awards shall vest and become fully exercisable or non-forfeitable as of the later of the date of the Change in Control and the Executive's termination date (collectively, the "Change in Control Severance Benefits").

(d) *Release*. As a condition of the Executive's receipt of the Severance Benefits or the Change in Control Severance Benefits, as applicable, the Executive must execute and deliver to the Company a separation and release of claims agreement in substantially the form attached hereto as Exhibit B (the "Release"), which Release must become irrevocable within sixty (60) days following the date of the Executive's termination of employment (or such shorter period as may be directed by the Company). The Severance Benefits or the Change in Control Severance Benefits, as applicable, will be paid or commence to be paid in the first regular payroll beginning after the Release becomes effective, provided that if the foregoing sixty (60) day period would end in a calendar year subsequent to the year in which the Executive's employment ends, the Severance Benefits or Change in Control Severance Benefits, as applicable, will not be paid or begin to be paid before the first payroll of the subsequent calendar year (the date the Severance Benefits or Change in Control Severance Benefits, as applicable, are paid or commence pursuant to this sentence, the "Payment Date"). The Executive must continue to comply with all post-employment obligations under law or in any agreement between the Executive and the Company, including the Restrictive Covenant Agreements, any similar agreement with the Company and as set forth in the Release in order to be eligible to receive or continue receiving the Severance Benefits or Change in Control Severance Benefits, as applicable. For the avoidance of doubt, if the Executive's employment is terminated by the Company without Cause or by the Executive with Good Reason prior to a Change in Control, (i) any then-outstanding and unvested time-based equity awards held by the Executive shall remain outstanding (but any vesting shall be suspended) for up to (but no longer than) three (3) months following the date of termination so that, if it is later determined that such termination occurred during the three (3)-month period prior to the closing of a Change in Control and the Executive is entitled to Change in Control acceleration and/or Change in Control Severance Benefits rather than Severance Benefits, the vesting of such awards may be accelerated, in accordance with Section 8(c), immediately prior to the closing of the Change in Control and (ii) any Change in Control Severance Benefits shall be reduced by any Severance Benefits previously paid to the Executive, if it is later determined that the termination occurred during the three (3)-month period prior to the closing of a Change in Control and that the Executive is entitled to Change in Control Severance Benefits rather than Severance Benefits.

(e) *Change in Control Definition*. For purposes of this Agreement, "Change in Control" shall mean the occurrence of any of the following events, provided that such event or occurrence constitutes a change in the ownership or effective control of the Company, or a change in the ownership of a substantial portion of the assets of the Company, as defined in Treasury Regulation §§ 1.409A-3(i)(5)(v), (vi) and (vii): (i) the acquisition by an individual, entity or group (within the meaning of Section 13(d)(3) or 14(d)(2) of the Securities Exchange Act of 1934 (the "Exchange Act")) (a "Person") of beneficial ownership of any capital stock of the Company if, after such acquisition, such Person beneficially owns (within the meaning of Rule 13d-3 under the Exchange Act) fifty percent (50%) or more of either (x) the then-outstanding shares of common stock of the Company (the "Outstanding Company Common Stock") or (y) the combined voting power of the then-outstanding securities of the Company entitled to vote generally in the election of directors (the "Outstanding Company Voting Securities"); provided, however, that for purposes of this subsection (i), the following acquisitions shall not constitute a Change in Control: (1) any acquisition directly from the Company or (2) any acquisition by any entity pursuant to a Business Combination (as defined below) which complies with clauses (x) and (y) of subsection (iii) of this definition; or (ii) a change in the composition of the Board that results in the Continuing Directors (as defined below) no longer constituting a majority of the Board (or, if applicable, the Board of Directors of a successor corporation to the Company), where the term "Continuing Director" means at any date a member of the Board (x) who was a member of the Board on the Effective Date or (y) who was nominated or elected subsequent to such date by at least a majority of the directors who were Continuing Directors at the time of such nomination or election or whose election to the Board was recommended or endorsed by at least a majority of the directors who were Continuing Directors at the time of such nomination or election; provided, however, that there shall be excluded from this clause (y) any individual whose initial assumption of office occurred as a result of an actual or threatened election contest with respect to the election or removal of directors or other actual or threatened solicitation of proxies or consents, by or on behalf of a person other than the Board; or (iii) the consummation of a merger, consolidation, reorganization, recapitalization or share exchange involving the Company, or a sale or other disposition of all or substantially all of the assets of the Company (a "Business Combination"), unless, immediately following such Business Combination, each of the following two (2) conditions is satisfied: (x) all or substantially all of the individuals and entities who were the beneficial owners of the Outstanding Company Common Stock and Outstanding Company Voting Securities immediately prior to such Business Combination beneficially own, directly or indirectly, more than fifty percent (50%) of the then-outstanding shares of common stock and the combined voting power of the then-outstanding securities entitled to vote generally in the election of directors, respectively, of the resulting or acquiring corporation in such Business Combination (which shall include, without limitation, a corporation which as a result of such transaction owns the Company or substantially all of the Company's assets either directly or through one (1) or more subsidiaries) (such resulting or acquiring corporation is referred to herein as the "Acquiring Corporation") in substantially the same proportions as their ownership of the Outstanding Company Common Stock and Outstanding Company Voting Securities, respectively, immediately prior to such Business Combination and (y) no Person (excluding any employee benefit plan (or related trust) maintained or sponsored by the Company or by the Acquiring Corporation) beneficially owns, directly or indirectly, fifty percent (50%) or more of the then-outstanding shares of common stock of the Acquiring Corporation, or of the combined voting power of the then-outstanding securities of such corporation entitled to vote generally in the election of directors (except to the extent that such ownership existed prior to the Business Combination); or (iv) the liquidation or dissolution of the Company.

(f) *Resignation from other Positions*. If, as of the date that the Executive's employment terminates for any reason, the Executive is a member of the Board (or the board of directors of any entity affiliated with the Company), or hold any other offices or positions with the Company (or any entity affiliated with the Company), the Executive shall, unless otherwise requested by the Company, immediately relinquish and/or resign from any such board memberships, offices and positions as of the date the Executive's employment terminates. The Executive agrees to execute such documents and take such other actions as the Company may request to reflect such relinquishments and/or resignation(s).

9. *Absence of Restrictions*. The Executive represents and warrants that the Executive is not bound by any employment contracts, restrictive covenants or other restrictions that prevent (or purports to prevent) the Executive from carrying out the Executive's responsibilities for the Company, or which are in any way inconsistent with any of the terms of this Agreement.

10. *Notice*. Any notice delivered under this Agreement shall be deemed duly delivered three (3) business days after it is sent by registered or certified mail, return receipt requested, postage prepaid, one (1) business day after it is sent for next-business day delivery via a reputable nationwide overnight courier service, or immediately upon hand delivery, in each case to the address of the recipient set forth below.

To Executive:

At the address set forth in the Executive's personnel file

To Company:

Carisma Therapeutics Inc.
3675 Market Street, Suite 200
Philadelphia, Pennsylvania 19104

Either Party may change the address to which notices are to be delivered by giving notice of such change to the other Party in the manner set forth in this Section 10.

11. *Applicable Law and Forum*. This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania (without reference to the conflict of laws provisions thereof). Any action, suit or other legal proceeding arising under or relating to any provision of this Agreement shall be commenced only in a court of the Commonwealth of Pennsylvania (or, if appropriate, a federal court located within the Commonwealth of Pennsylvania), and the Company and the Executive each consent to the exclusive jurisdiction of such a court. The Company and the Executive each hereby irrevocably waives any right to a trial by jury in any action, suit or other legal proceeding arising under or relating to any provision of this Agreement.

12. *Successors and Assigns*. This Agreement shall be binding upon and inure to the benefit of both Parties and their respective successors and assigns, including any corporation with which or into which the Company may be merged or which may succeed to its assets or business; provided, however, that the obligations of the Executive are personal and shall not be assigned by the Executive.

13. *At-Will Employment*. This Agreement shall not be construed as an agreement, either expressed or implied, to employ the Executive for any stated term, and shall in no way alter the Company's policy of employment at will, under which both the Executive and the Company remain free to terminate the employment relationship, with or without cause, at any time, with or without notice. Although the Executive's job duties, title, compensation and benefits, as well as the Company's personnel policies and procedures, may change from time to time, the "at-will" nature of the Executive's employment may only be changed by a written agreement signed by the Executive and a duly authorized representative of the Company, which written agreement expressly states the intention to modify the at-will nature of the Executive's employment, provided, however, that nothing in the foregoing shall alter any rights the Executive may have as set forth in Section 8 above. Similarly, nothing in this Agreement shall be construed as an agreement, either express or implied, to pay the Executive any compensation or grant the Executive any benefit beyond the end of the Executive's employment with the Company, except as explicitly set forth in Section 8 above.

14. *Acknowledgment*. The Executive states and represents that the Executive has had an opportunity to fully discuss and review the terms of this Agreement with an attorney. The Executive further states and represents that the Executive has carefully read this Agreement, understands the contents herein, freely and voluntarily assents to all of the terms and conditions hereof, and signs the Executive's name of the Executive's own free act.

15. *No Oral Modification, Waiver, Cancellation or Discharge*. This Agreement may be amended or modified only by a written instrument executed by both the Company and the Executive. No delay or omission by the Company in exercising any right under this Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

16. *Captions and Pronouns*. The captions of the sections of this Agreement are for convenience of reference only and in no way define, limit or affect the scope or substance of any section of this Agreement. Whenever the context may require, any pronouns used in this Agreement shall include the corresponding masculine, feminine or neuter forms, and the singular forms of nouns and pronouns shall include the plural, and vice versa.

17. *Interpretation*. The Parties agree that this Agreement will be construed without regard to any presumption or rule requiring construction or interpretation against the drafting Party. References in this Agreement to "include" or "including" should be read as though they said "without limitation" or equivalent forms. Except where the context requires otherwise, references in this Agreement to the "Board" shall include any authorized committee thereof.

18. *Severability*. Each provision of this Agreement must be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be prohibited by or invalid under applicable law, such provision will be ineffective only to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Agreement. Moreover, if a court of competent jurisdiction determines any of the provisions contained in this Agreement to be unenforceable because the provision is excessively broad in scope, whether as to duration, activity, geographic application, subject or otherwise, it will be construed, by limiting or reducing it to the extent legally permitted, so as to be enforceable to the extent compatible with then applicable law to achieve the intent of the Parties.

19. *Modified Section 280G Cutback*. Notwithstanding any other provision of this Agreement, except as set forth in Section 19(b), in the event that the Company undergoes a "Change in Ownership or Control" (as defined below), the following provisions shall apply:

(a) The Company shall not be obligated to provide to the Executive any portion of any "Contingent Compensation Payments" (as defined below) that the Executive would otherwise be entitled to receive to the extent necessary to eliminate any "excess parachute payments" (as defined in Section 280G(b)(1) of the Code) for the Executive. For purposes of this Section 19, the Contingent Compensation Payments so eliminated shall be referred to as the "Eliminated Payments" and the aggregate amount (determined in accordance with Treasury Regulation Section 1.280G-1, Q/A-30 or any successor provision) of the Contingent Compensation Payments so eliminated shall be referred to as the "Eliminated Amount."

(b) Notwithstanding the provisions of Section 19(a), no such reduction in Contingent Compensation Payments shall be made if (1) the Eliminated Amount (computed without regard to this sentence) exceeds (2) one hundred percent (100%) of the aggregate present value (determined in accordance with Treasury Regulation Section 1.280G-1, Q/A-31 and Q/A-32 or any successor provisions) of the amount of any additional taxes that would be incurred by the Executive if the Eliminated Payments (determined without regard to this sentence) were paid to the Executive (including state and federal income taxes on the Eliminated Payments, the excise tax imposed by Section 4999 of the Code payable with respect to all of the Contingent Compensation Payments in excess of the Executive's "base amount" (as defined in Section 280G(b)(3) of the Code), and any withholding taxes). The override of such reduction in Contingent Compensation Payments pursuant to this Section 19(b) shall be referred to as a "Section 19(b) Override." For purpose of this paragraph, if any federal or state income taxes would be attributable to the receipt of any Eliminated Payment, the amount of such taxes shall be computed by multiplying the amount of the Eliminated Payment by the maximum combined federal and state income tax rate provided by law.

(c) For purposes of this Section 19 the following terms shall have the following respective meanings:

(i) "Change in Ownership or Control" shall mean a change in the ownership or effective control of the Company or in the ownership of a substantial portion of the assets of the Company determined in accordance with Section 280G(b)(2) of the Code.

(ii) "Contingent Compensation Payment" shall mean any payment (or benefit) in the nature of compensation that is made or made available (under this Agreement or otherwise) to or for the benefit of a "disqualified individual" (as defined in Section 280G(c) of the Code) and that is contingent (within the meaning of Section 280G(b)(2)(A)(i) of the Code) on a Change in Ownership or Control of the Company.

(d) Any payments or other benefits otherwise due to the Executive following a Change in Ownership or Control that could reasonably be characterized (as determined by the Company) as Contingent Compensation Payments (the "Potential Payments") shall not be made until the dates provided for in this Section 19(d). Within thirty (30) days after each date on which the Executive first becomes entitled to receive (whether or not then due) a Contingent Compensation Payment relating to such Change in Ownership or Control, the Company shall determine and notify the Executive (with reasonable detail regarding the basis for its determinations) (1) which Potential Payments constitute Contingent Compensation Payments, (2) the Eliminated Amount and (3) whether the Section 19(b) Override is applicable. Within thirty (30) days after delivery of such notice to the Executive, the Executive shall deliver a response to the Company (the "Executive Response") stating either (A) that the Executive agrees with the Company's determination pursuant to the preceding sentence or (B) that the Executive disagrees with such determination, in which case the Executive shall set forth (x) which Potential Payments should be characterized as Contingent Compensation Payments, (y) the Eliminated Amount, and (z) whether the Section 19(b) Override is applicable. In the event that the Executive fails to deliver an Executive Response on or before the required date, the Company's initial determination shall be final. If and to the extent that any Contingent Compensation Payments are required to be treated as Eliminated Payments pursuant to this Section 19, then the payments shall be reduced or eliminated, as determined by the Company, in the following order: (i) any cash payments, (ii) any taxable benefits, (iii) any nontaxable benefits, and (iv) any vesting of equity awards in each case in reverse order beginning with payments or benefits that are to be paid the farthest in time from the date that triggers the applicability of the excise tax, to the extent necessary to maximize the Eliminated Payments. If the Executive states in the Executive Response that the Executive agrees with the Company's determination, the Company shall make the Potential Payments to the Executive within three (3) business days following delivery to the Company of the Executive Response (except for any Potential Payments which are not due to be made until after such date, which Potential Payments shall be made on the date on which they are due). If the Executive states in the Executive Response that the Executive disagrees with the Company's determination, then, for a period of sixty (60) days following delivery of the Executive Response, the Executive and the Company shall use good faith efforts to resolve such dispute. If such dispute is not resolved within such 60-day period, such dispute shall be settled exclusively by arbitration as provided in Section 11 of this Agreement. The Company shall, within three (3) business days following delivery to the Company of the Executive Response, make to the Executive those Potential Payments as to which there is no dispute between the Company and the Executive regarding whether they should be made (except for any such Potential Payments which are not due to be made until after such date, which Potential Payments shall be made on the date on which they are due). The balance of the Potential Payments shall be made within three (3) business days following the resolution of such dispute.

The provisions of this Section 19 are intended to apply to any and all payments or benefits available to the Executive under this Agreement or any other agreement or plan under which the Executive may receive Contingent Compensation Payments.

20. *Entire Agreement*. Except as expressly provided in the Merger Agreement and any other agreements to which the Executive is or will be party in connection with the Transaction, this Agreement constitutes the entire agreement between the Parties and supersedes and replaces all prior agreements and understandings, whether written or oral, relating to the subject matter of this Agreement, including, without limitation, the Prior Agreement; provided, however, and for the avoidance of doubt, nothing herein shall be deemed to supersede the Restrictive Covenant Agreements, which remain in full force and effect as set forth in Section 6 above.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the day and year set forth above.

Carisma Therapeutics Inc.

By: /s/ Steven Kelly
Name: Steven Kelly
Title: Chief Executive Officer

EXECUTIVE:

/s/ Richard Morris
Richard Morris

EXHIBIT A

Payments Subject to Section 409A

1. Subject to this Exhibit A, any severance payments or benefits that may be due under the Agreement shall begin only upon the date of the Executive's "separation from service" (determined as set forth below) which occurs on or after the termination of the Executive's employment. The following rules shall apply with respect to distribution of the severance payments or benefits, if any, to be provided to the Executive under the Agreement, as applicable:

(a) It is intended that each installment of the severance payments or benefits provided under the Agreement shall be treated as a separate "payment" for purposes of Section 409A of the Internal Revenue Code ("Section 409A"). Neither the Company nor the Executive shall have the right to accelerate or defer the delivery of any such payments or benefits except to the extent specifically permitted or required by Section 409A.

(b) If, as of the date of the Executive's "separation from service" from the Company, the Executive is not a "specified employee" (within the meaning of Section 409A), then each installment of the severance payments or benefits shall be made on the dates and terms set forth in the letter agreement.

(c) If, as of the date of the Executive's "separation from service" from the Company, the Executive is a "specified employee" (within the meaning of Section 409A), then:

(i) Each installment of the severance payments or benefits due under the Agreement that, in accordance with the dates and terms set forth herein, will in all circumstances, regardless of when the Executive's separation from service occurs, be paid within the short-term deferral period (as defined under Section 409A) shall be treated as a short-term deferral within the meaning of Treasury Regulation Section 1.409A-1(b)(4) to the maximum extent permissible under Section 409A and shall be paid on the dates and terms set forth in the Agreement; and

(ii) Each installment of the severance payments or benefits due under the Agreement that is not described in this Exhibit A, Section 1(c)(i) and that would, absent this subsection, be paid within the six (6)-month period following the Executive's "separation from service" from the Company shall not be paid until the date that is six (6) months and one day after such separation from service (or, if earlier, the Executive's death), with any such installments that are required to be delayed being accumulated during the six (6)-month period and paid in a lump sum on the date that is six months and one day following the Executive's separation from service and any subsequent installments, if any, being paid in accordance with the dates and terms set forth herein; provided, however, that the preceding provisions of this sentence shall not apply to any installment of payments or benefits if and to the maximum extent that that such installment is deemed to be paid under a separation pay plan that does not provide for a deferral of compensation by reason of the application of Treasury Regulation 1.409A-1(b)(9)(iii) (relating to separation pay upon an involuntary separation from service). Any installments that qualify for the exception under Treasury Regulation Section 1.409A-1(b)(9)(iii) must be paid no later than the last day of the Executive's second taxable year following the taxable year in which the separation from service occurs.

2. The determination of whether and when the Executive's separation from service from the Company has occurred shall be made and in a manner consistent with, and based on the presumptions set forth in, Treasury Regulation Section 1.409A-1(h). Solely for purposes of Section 2 of this Exhibit A, "Company" shall include all persons with whom the Company would be considered a single employer under Section 414(b) and 414(c) of the Code.

3. All reimbursements and in-kind benefits provided under the Agreement shall be made or provided in accordance with the requirements of Section 409A to the extent that such reimbursements or in-kind benefits are subject to Section 409A, including, where applicable, the requirements that (i) any reimbursement is for expenses incurred during the Executive's lifetime (or during a shorter period of time specified in the Agreement), (ii) the amount of expenses eligible for reimbursement during a calendar year may not affect the expenses eligible for reimbursement in any other calendar year, (iii) the reimbursement of an eligible expense will be made on or before the last day of the calendar year following the year in which the expense is incurred and (iv) the right to reimbursement is not subject to set off or liquidation or exchange for any other benefit.

4. The Company makes no representation or warranty and shall have no liability to the Executive or to any other person if any of the provisions of the Agreement (including this Exhibit A) are determined to constitute deferred compensation subject to Section 409A but that do not satisfy an exemption from, or the conditions of, that section.

5. The Agreement is intended to comply with, or be exempt from, Section 409A and shall be interpreted accordingly.

[Remainder of page intentionally left blank.]

EXHIBIT B[1]

Sample Separation and Release Agreement

[Insert Date]
[Insert Name]

Dear **[Insert Name]**:

In connection with the termination of your employment with [Carisma Therapeutics Inc.] (the "Company") on **[Separation Date]**, you are eligible to receive [Severance Benefits] [Change in Control Severance Benefits] as described in Section 8 of the employment agreement executed between you and the Company dated _____ (the "Employment Agreement") if you sign and return this letter agreement to me by **[Return Date –7/21/45 days from date of receipt of this letter agreement] [and it becomes binding between you and the Company**]. By signing and returning this letter agreement [**and not revoking your acceptance]**, you will be agreeing to the terms and conditions set forth in the numbered paragraphs below, including the release of claims set forth in paragraph 2. Therefore, you are advised to consult with an attorney before signing this letter agreement and you have been given at least [**seven/twenty-one (21)/forty-five (45)]**[2] days to do so. [**If you sign this letter agreement, you may change your mind and revoke your agreement during the seven (7) day period after you have signed it (the "Revocation Period") by notifying me in writing. If you do not so revoke, this letter agreement will become a binding agreement between you and the Company upon the expiration of the Revocation Period.]**

Although your receipt of the [Severance Benefits] [Change in Control Severance Benefits] is expressly conditioned on your entering into this letter agreement, the following will apply regardless of whether or not you do so:

- As of the Separation Date, all salary payments from the Company will cease and any benefits you had as of the Separation Date under Company-provided benefit plans, programs, or practices will terminate, except as required by federal or state law.

- You will receive payment for your final wages and any unused vacation time accrued through the Separation Date.

- You may, if eligible and at your own cost, elect to continue receiving group medical insurance pursuant to applicable "COBRA" law. Please consult the COBRA materials to be provided under separate cover for details regarding these benefits.

[1] Note: The Company may revise this release agreement in its sole discretion to reflect changes in law, additional statutes or claims, benefits, or employee's circumstances, so that the Company receives the benefit of the most complete release of claims that is legally permissible (without releasing employee's right to receive the Severance Benefits), and the Company may also change the timing, if required to obtain such release. This footnote and the other footnotes herein are part of the form of release and are to be removed only when the Company finalizes the letter agreement for execution.

[2] Consideration period depends upon circumstances of separation.

- You are obligated to keep confidential and not to use or disclose any and all non-public information concerning the Company that you acquired during the course of your employment with the Company, including any non-public information concerning the Company's business affairs, business prospects, and financial condition, except as otherwise permitted by paragraph 9 below. Further, you remain subject to any and all continuing confidentiality, non-competition and/or non-solicitation obligations that you may have pursuant to any previous agreement with the Company, including, as may be applicable and without limitation, the Employment Agreement and the Invention and Non-Disclosure Agreement and Non-Competition and Non-Solicitation Agreement (the "Restrictive Covenant Agreements") referenced therein.

- You must return to the Company no later than the Separation Date all Company property.

If you elect to timely sign and return this letter agreement, comply with all of your obligations hereunder, and do not revoke your acceptance in writing within the Revocation Period, the following numbered paragraphs set forth the terms and conditions that will also apply:

1. **Severance Benefits** The Company will provide you with the [as may be applicable [Severance Benefits] or [Change in Control Severance Benefits]] set forth in Section 8 of the Employment Agreement (the ["Severance Benefits"] ["Change in Control Severance Benefits"]), **s**ubject to and in accordance with the terms and conditions thereof.

2. **Release** – In consideration of the [Severance Benefits] [Change in Control Severance Benefits], which you acknowledge you would not otherwise be entitled to receive, you hereby fully, forever, irrevocably and unconditionally release, remise and discharge the Company, its affiliates, subsidiaries, parent companies, predecessors, and successors, and all of their respective past and present officers, directors, stockholders, partners, members, managers, employees, agents, representatives, plan administrators, attorneys, insurers and fiduciaries (each in their individual and corporate capacities) (collectively, the "Released Parties") from any and all claims, charges, complaints, demands, actions, causes of action, suits, rights, debts, sums of money, costs, accounts, reckonings, covenants, contracts, agreements, promises, doings, omissions, damages, executions, obligations, liabilities, and expenses (including attorneys' fees and costs), of every kind and nature that you ever had or now have against any or all of the Released Parties, whether known or unknown, including, but not limited to, any and all claims arising out of or relating to your employment with and/or separation from the Company, including, but not limited to, all claims under Title VII of the Civil Rights Act of 1964, 42 U.S.C. § 2000e et seq., the Americans With Disabilities Act of 1990, 42 U.S.C. § 12101 et seq., **[the Age Discrimination in Employment Act, 29 U.S.C. § 621 et seq.,]** the Genetic Information Nondiscrimination Act of 2008, 42 U.S.C. § 2000ff et seq., the Family and Medical Leave Act, 29 U.S.C. § 2601 et seq., the Worker Adjustment and Retraining Notification Act ("WARN"), 29 U.S.C. § 2101 et seq., the Rehabilitation Act of 1973, 29 U.S.C. § 701 et seq., Executive Order 11246, Executive Order 11141, the Fair Credit Reporting Act, 15 U.S.C. § 1681 et seq., and the Employee Retirement Income Security Act of 1974 ("ERISA"), 29 U.S.C. § 1001 et seq., all as amended; all claims arising out of the Pennsylvania Human Relations Act, 43 Pa. Stat. § 951 et seq., the Pennsylvania Equal Pay Law, 43 Pa. Stat. § 336.1 et seq., the Pennsylvania Wage Payment and Collection Law, 43 Pa. Stat. § 251 et seq., and the Pennsylvania Whistleblower Law, 43 Pa. Stat. § 1421 et seq., all as amended; **[Insert any other applicable federal, state and local citations at the time of termination;]** all common law claims including, but not limited to, actions in defamation, intentional infliction of emotional distress, misrepresentation, fraud, wrongful discharge, and breach of contract (including, without limitation, all claims arising out of or relating to the Employment Agreement); all claims to any ownership interest in the Company, contractual or otherwise; all state and federal whistleblower claims to the maximum extent permitted by law; and any claim or damage arising out of your employment with and/or separation from the Company (including a claim for retaliation) under any common law theory or any federal, state or local statute or ordinance not expressly referenced above; provided, however, that nothing in this letter agreement: (i) prevents you from filing a charge with, cooperating with, or participating in any investigation or proceeding before, the Equal Employment Opportunity Commission or a state fair employment practices agency (except that you acknowledge that you may not recover any monetary benefits in connection with any such charge, investigation, or proceeding, and you further waive any rights or claims to any payment, benefit, attorneys' fees or other remedial relief in connection with any such charge, investigation or proceeding), (ii) deprives you of any accrued benefits to which you have acquired a vested right under any employee benefit plan or policy, stock plan or deferred compensation arrangement, any health care continuation to the extent required by applicable law or any agreement, or any right to severance benefits or any other benefits due to you upon termination of employment that you may have under the Employment Agreement; or (iii) deprives you of any rights you may have to be indemnified by the Company as provided in any agreement between the Company and you, or pursuant to the Company's Certificate of Incorporation or by-laws (recognizing that such indemnification is not guaranteed by this letter agreement and shall be governed by the instrument, if any, providing for such indemnification).

3. **Continuing Obligations** – You acknowledge and reaffirm your confidentiality and nondisclosure obligations discussed above, as well as any and all confidentiality, non-competition, nonsolicitation obligations and/or assignment of inventions set forth in any previous agreement you may have with the Company (including without limitation the Employment Agreement and the Restrictive Covenants Agreements referenced therein), which survive your separation from employment with the Company.

4. **Non-Disparagement** – You understand and agree that, to the extent permitted by law and except as otherwise permitted by paragraph 9 below, you will not, in public or private, make any false, disparaging, derogatory or defamatory statements, online (including, without limitation, on any social media, networking, or employer review site) or otherwise, to any person or entity, including, but not limited to, any media outlet, industry group, financial institution or current or former employee, board member, consultant, client or customer of the Company, regarding the Company or any of the other Released Parties, or regarding the Company's business affairs, business prospects, or financial condition.

5. **Cooperation** – You agree that, to the extent permitted by law, you shall cooperate fully with the Company in: (i) any internal investigation; (ii) any investigation, defense or prosecution of any claims or actions which already have been brought, are currently pending, or which may be brought in the future against the Company by a third party or by or on behalf of the Company against any third party, whether before a state or federal court, any state or federal government agency, or a mediator or arbitrator; or (iii) any other administrative, regulatory, or judicial inquiry, investigation, proceeding or arbitration. Your full cooperation hereunder shall include, but not be limited to, making yourself available to the Company upon reasonable notice for interviews and factual investigations; appearing at the Company's request to give testimony without requiring service of a subpoena or other legal process; volunteering to the Company pertinent information; and turning over all relevant documents which are in or may come into your possession. The term "cooperation" does not mean that you must provide information that is favorable to the Company; it means only that you will provide truthful information within your knowledge and possession upon request of the Company. The Company will reimburse you for all reasonable and documented out-of-pocket expenses that you incur at the Company's request to comply with this paragraph. You further agree that, to the extent permitted by law, you will notify the Company promptly in the event that you are served with a subpoena (other than a subpoena issued by a government agency), or in the event that you are asked to provide a third party (other than a government agency) with information concerning any actual or potential complaint or claim against the Company.

6. **Return of Company Property** – You confirm that you have returned to the Company all keys, files, records (and copies thereof), equipment (including, but not limited to, computer hardware, software, printers, flash drives and other storage devices, wireless handheld devices, cellular phones, tablets, etc.), Company identification, and any other Company owned property in your possession or control, and that you have left intact all, and have otherwise not destroyed, deleted, or made inaccessible to the Company any, electronic Company documents, including, but not limited to, those that you developed or helped to develop during your employment, and that you have not (a) retained any copies in any form or media; (b) maintained access to any copies in any form, media, or location; (c) stored any copies in any physical or electronic locations that are not readily accessible or not known to the Company or that remain accessible to you; or (d) sent, given, or made accessible any copies to any persons or entities that the Company has not authorized to receive such electronic or hard copies. You further confirm that you have cancelled all accounts for your benefit, if any, in the Company's name, including but not limited to, credit cards, telephone charge cards, cellular phone accounts, and computer accounts.

7. **Business Expenses and Final Compensation** – You acknowledge that you have been reimbursed by the Company for all business expenses incurred in conjunction with the performance of your employment and that no other reimbursements are owed to you. You further acknowledge that you have received payment in full for all services rendered in conjunction with your employment by the Company, including payment for all wages, bonuses, and accrued, unused vacation time, and that no other compensation is owed to you except as provided herein.

8. **Confidentiality** – You understand and agree that, to the extent permitted by law and except as otherwise permitted by paragraph 9 below, the terms and contents of this letter agreement, and the contents of the negotiations and discussions resulting in this letter agreement, shall be maintained as confidential by you and your agents and representatives and shall not be disclosed except as otherwise agreed to in writing by the Company.

9. **Scope of Disclosure Restrictions** – Nothing in this letter agreement or elsewhere prohibits you from communicating with government agencies about possible violations of federal, state, or local laws or otherwise providing information to government agencies, filing a complaint with government agencies, or participating in government agency investigations or proceedings. You are not required to notify the Company of any such communications; provided, however, that nothing herein authorizes the disclosure of information you obtained through a communication that was subject to the attorney-client privilege. Further, notwithstanding your confidentiality and nondisclosure obligations, you are hereby advised as follows pursuant to the Defend Trade Secrets Act: "An individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that (A) is made (i) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual (A) files any document containing the trade secret under seal; and (B) does not disclose the trade secret, except pursuant to court order."

10. **Amendment and Waiver** – This letter agreement shall be binding upon the parties and may not be modified in any manner, except by an instrument in writing of concurrent or subsequent date signed by duly authorized representatives of the parties hereto. This letter agreement is binding upon and shall inure to the benefit of the parties and their respective agents, assigns, heirs, executors, successors and administrators. No delay or omission by the Company in exercising any right under this letter agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

11. **Validity** – Should any provision of this letter agreement be declared or be determined by any court of competent jurisdiction to be illegal or invalid, the validity of the remaining parts, terms or provisions shall not be affected thereby and said illegal or invalid part, term or provision shall be deemed not to be a part of this letter agreement.

12. **Nature of Agreement –** You understand and agree that this letter agreement is a severance agreement and does not constitute an admission of liability or wrongdoing on the part of the Company.

13. **Acknowledgments –** You acknowledge that you have been given at least **[seven (7) / twenty-one (21) / forty-five (45)]** days to consider this letter agreement, and that the Company is hereby advising you to consult with an attorney of your own choosing prior to signing this letter agreement. **[You understand that you may revoke this letter agreement during the Revocation Period by notifying me in writing, and the letter agreement shall not be effective or enforceable until the expiration of the Revocation Period. You understand and agree that by entering into this letter agreement, you are waiving any and all rights or claims you might have under the Age Discrimination in Employment Act, as amended by the Older Workers Benefit Protection Act, and that you have received consideration beyond that to which you were previously entitled.]**

14. **[Eligibility for Severance Program – Attached to this letter agreement as Attachment A is a description of (i) any class, unit or group of individuals covered by the program of severance benefits which the Company has offered to you, and any applicable time limits regarding such severance benefit program; and (ii) the job title and ages of all individuals eligible or selected for such severance benefit program, and the ages of all individuals in the same job classification or organizational unit who are not eligible or who were not selected for such severance benefit program.]**

15. **Voluntary Assent** – You affirm that no other promises or agreements of any kind have been made to or with you by any person or entity whatsoever to cause you to sign this letter agreement, and that you fully understand the meaning and intent of this letter agreement. You state and represent that you have had an opportunity to fully discuss and review the terms of this letter agreement with an attorney. You further state and represent that you have carefully read this letter agreement, understand the contents herein, freely and voluntarily assent to all of the terms and conditions hereof, and sign your name of your own free act.

16. **Applicable Law** – This letter agreement shall be interpreted and construed by the laws of the Commonwealth of Pennsylvania, without regard to conflict of laws provisions. You hereby irrevocably submit to and acknowledge and recognize the jurisdiction of the courts of the Commonwealth of Pennsylvania, or if appropriate, a federal court located in the Commonwealth of Pennsylvania (which courts, for purposes of this letter agreement, are the only courts of competent jurisdiction), over any suit, action or other proceeding arising out of, under or in connection with this letter agreement or the subject matter hereof. You hereby irrevocably waive any right to a trial by jury in any action, suit or other legal proceeding arising under or relating to any provision of this letter agreement.

17. **Entire Agreement** – This letter agreement contains and constitutes the entire understanding and agreement between the parties hereto with respect to your severance benefits and the settlement of claims against the Company and cancels all previous oral and written negotiations, agreements, and commitments in connection therewith.

18. **Tax Acknowledgement** – In connection with the [Severance Benefits] [Change in Control Severance Benefits], the Company shall withhold and remit to the tax authorities the amounts required under applicable law, and you shall be responsible for all applicable taxes with respect to such [Severance Benefits] [Change in Control Severance Benefits] under applicable law. You acknowledge that you are not relying upon the advice or representation of the Company with respect to the tax treatment of the [Severance Benefits] [Change in Control Severance Benefits].

[Signature Page Follows]

If you have any questions about the matters covered in this letter agreement, please call me.

Very truly yours,

By: _____
[Name]
[Title]

I hereby agree to the terms and conditions set forth above. **[I have been given at least [twenty-one (21) / forty-five (45)] days to consider this letter agreement and I have chosen to execute this on the date below. I intend that this letter agreement will become a binding agreement between me and the Company if I do not revoke my acceptance during the Revocation Period.]**

_____
[Insert Name]

_____
Date

To be returned in a timely manner as set forth on the first page of this letter agreement, but not to be signed before the close of business on your last day of employment.[3]

[3] Note: All footnotes will be removed from the final execution version of this agreement.

Exhibit 10.9

Execution Copy

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT AGREEMENT (the "Agreement"), is made as of March 7, 2023 (the "Effective Date"), by and between Carisma Therapeutics Inc., a Delaware corporation (the "Company"), and Michael Klichinsky (the "Executive") (together, the "Parties").

RECITALS

WHEREAS, the Executive has been employed by CTx Operations, Inc. (f/k/a CARISMA Therapeutics Inc.) (the "Carisma Sub") pursuant to that certain letter agreement dated October 18, 2018, as amended detailing the terms and conditions of Executive's employment with the Carisma Sub (the "Prior Agreement");

WHEREAS, pursuant to that certain Agreement and Plan of Merger and Reorganization dated September 20, 2022 and amended on December 29, 2022 and February 13, 2023 (the "Merger Agreement"), by and among the Company (f/k/a Sesen Bio, Inc.), Seahawk Merger Sub, Inc., a Delaware corporation and wholly-owned subsidiary of the Company ("Merger Sub"), and the Carisma Sub, Merger Sub merged with and into Carisma Sub, with Carisma Sub continuing as a wholly-owned subsidiary of the Company and the surviving corporation of the merger (the "Merger");

WHEREAS, the Parties desire to enter into an agreement whereby the Executive will be employed as Chief Scientific Officer of the Company on the terms contained in this Agreement; and

WHEREAS, the Executive has agreed to accept such employment with the Company on the terms and conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the foregoing and of the respective covenants and agreements of the Parties herein contained, the Parties hereto agree to the following terms, which shall govern the Executive's employment from and after the Effective Date:

1. *Agreement.* This Agreement shall be effective as of the Effective Date. The Executive's employment on the terms contained in this Agreement shall commence on the Effective Date and shall continue until such employment relationship is terminated in accordance with Section 7 hereof (the "Term of Employment").

2. *Position*. During the Term of Employment, the Executive shall serve as the Chief Scientific Officer of the Company, working out of the Company's office in Philadelphia, Pennsylvania, and travelling as reasonably required by the Executive's job duties.

3. *Scope of Employment*. During the Term of Employment, the Executive shall be responsible for the performance of those duties consistent with the Executive's position as Chief Scientific Officer. The Executive shall report to the Chief Executive Officer of the Company or his/her designee. The Executive agrees to devote the Executive's full business time, best efforts, skill, knowledge, attention, and energies to the advancement of the Company's business and interests and to the performance of the Executive's duties and responsibilities as an employee of the Company and not to engage in any other business activities (whether as an employee, consultant, board member, advisor or in any other capacity) without prior approval from the Company, except the Executive may engage in charitable or civic activities and/or serve as an executor, trustee, or other similar fiduciary capacity, provided, however, that in no event may any activity be undertaken or continued if it would (i) be in violation of any provision of this Agreement or other agreement between the Executive and the Company, (ii) interfere with the performance of the Executive's duties for the Company, or (iii) present a conflict of interest with the Company's business interests. As an employee of the Company, the Executive will be required to comply with all Company policies and procedures. Violations of the Company's policies may lead to immediate termination of the Executive's employment, provided, however, that nothing in the foregoing shall alter any rights the Executive may have as set forth in Section 8 below. Further, the Company's premises, including all workspaces, furniture, documents, and other tangible materials, and all information technology resources of the Company (including computers, data and other electronic files, and all internet and email) are subject to oversight and inspection by the Company at any time. Company employees should have no expectation of privacy with regard to any Company premises, materials, resources, or information.

4. *Compensation*. As full compensation for all services rendered by the Executive to the Company and any affiliate thereof, during the Term of Employment, the Company will provide to the Executive the following:

(a) *Base Salary*. The Executive shall receive a base salary, effective as of January 1, 2023, at the annualized rate of $420,000 (the "Base Salary"). For the avoidance of doubt, to the extent Executive is entitled to additional base salary for the period between January 1, 2023 and the Effective Date after taking into account any payments of base salary made by Carisma Sub to the Executive prior to the Effective Date, such payments will be made in the first payroll following the Effective Date. Otherwise, the Executive's Base Salary shall be paid in equal installments in accordance with the Company's regularly established payroll procedures. The Executive's Base Salary will be reviewed on an annual or more frequent basis by the Company's board of directors (the "Board") and is subject to change in the discretion of the Board.

(b) *Annual Discretionary Bonus*. The Executive will be eligible to receive an annual discretionary performance bonus of 40% of the Executive's Base Salary (the "Target Bonus"), based on the Board's assessment of the Executive's performance and the Company's attainment of targeted goals to be set by the Board in its sole discretion. Following the close of each calendar year, the Board will determine whether the Executive has earned a performance bonus, and the amount of any performance bonus, based on the set criteria. No amount of the performance bonus is guaranteed, and the Executive must be an active employee of the Company on the date the bonus is distributed in order to be eligible for and to earn any bonus award, as it also serves as an incentive for the Executive to remain employed by the Company. The Executive's bonus eligibility will be reviewed on an annual or more frequent basis by the Board and is subject to change in the discretion of the Board.

(c) *Equity Award*. The Executive will be eligible to receive equity awards, if any, at such times and on such terms and conditions as the Board shall, in its sole discretion, determine.

(d) *Paid Time Off*. The Executive will be eligible for a maximum of twenty-five (25) days of paid time off ("PTO") per calendar year to be taken at such times as may be approved by the Company. The number of PTO days for which the Executive is eligible shall accrue at the rate of 2.083 days per month that the Executive is employed during such calendar year. Any unused PTO time will be forfeited at the end of each calendar year.

(e) *Benefits*. Subject to eligibility requirements and the Company's polices, the Executive shall have the right, on the same basis as other similarly-situated employees of the Company, to participate in, and to receive benefits under, all employee health, disability, insurance, fringe, welfare benefit and retirement plans, arrangements, practices and programs the Company provides to its senior executives in accordance with the terms thereof as in effect from time to time. The Company reserves the right to modify, amend and/or terminate any and all of its benefits plans at is discretion.

(f) *Withholdings*. All compensation payable to the Executive shall be subject to applicable taxes and withholdings.

5. *Expenses*. The Executive will be reimbursed for the Executive's actual, necessary and reasonable business expenses pursuant to Company policy, subject to the provisions of Section 3 of Exhibit A attached hereto.

6. *Restrictive Covenants Agreements*. The Executive hereby acknowledges that each of the Invention and Non-Disclosure Agreement and the Non-Competition and Non-Solicitation Agreement that the Executive previously executed in connection with the Executive's employment with the Carisma Sub (together, the "Restrictive Covenant Agreements") remain in full force and effect, with the terms thereof hereby deemed incorporated herein; provided, however, that the references therein to "Company" shall be deemed hereinafter to mean the Company, as well as the Carisma Sub. The Executive further acknowledges that the Executive's employment with the Company is conditioned on the Executive's continued compliance with the Restrictive Covenant Agreements.

7. *Employment Termination*. This Agreement and the employment of the Executive shall terminate upon the occurrence of any of the following:

(a) Upon the death of the Executive or at the election of the Company due to the Executive's "Disability". As used in this Agreement, the term "Disability" shall mean a physical or mental illness or disability that prevents the Executive from performing the duties of the Executive's position for a period of more than any three (3) consecutive months or for periods aggregating more than twenty-six (26) weeks. The Company shall determine in good faith and in its sole discretion whether the Executive is unable to perform the services provided for herein.

(b) At the election of the Company, with or without "Cause" (as defined below), immediately upon written notice by the Company to the Executive. As used in this Agreement, "Cause" shall mean:

(i) the Executive's engagement in any conduct that has materially and adversely affected, or is reasonably likely to materially and adversely affect, the business interests or reputation of the Company (for avoidance of doubt, "conduct" in this subsection does not mean poor performance or failure to meet Company objectives);

(ii) any breach by the Executive of the Restrictive Covenant Agreements;

(iii) the Executive's willful and repeated failure to perform in any material respect, the Executive's duties to the Company under this Agreement;

(iv) the Executive's fraud or embezzlement, or the Executive's willful misconduct with respect to the Company;

(v) the Executive's material breach of this Agreement; or

(vi) the Executive's conviction of, or plea of guilty or *nolo contendere* to, a misdemeanor relating to the Company, any crime involving dishonesty or moral turpitude, or any felony;

provided however, that with respect to subsections (i), (ii) (iii) and (v) hereof, the Executive was given thirty (30) calendar days' written notice of such conduct, breach, or deficiencies and an opportunity to cure such conduct, breach or deficiencies but the Executive failed to do so within such period (provided that the Executive is eligible for no more than two "cure" opportunities during the Executive's employment).

(c) At the election of the Executive, with or without "Good Reason" (as defined below), upon written notice by the Executive to the Company (subject, if it is with Good Reason, to the timing provisions set forth in the definition of Good Reason). As used in this Agreement, "Good Reason" shall mean the occurrence (without the Executive's prior written consent), of any of the following events:

(i) a material reduction in the Executive's authority, duties, or responsibilities or a material reduction in the authority, duties or responsibilities of the person to whom the Executive reports;

(ii) the relocation of the principal place at which the Executive provides services to the Company by at least fifty (50) miles and to a location such that the Executive's daily commuting distance is increased;

(iii) a material reduction of the Executive's Base Salary; or

(iv) a material breach by the Company of its obligations under this letter Agreement.

No termination will be treated as a termination by the Executive for Good Reason unless (x) the Executive has given written notice to the Company of the Executive's intention to terminate the Executive's employment for Good Reason, describing the grounds for such action, no later than ninety (90) days after the first occurrence of such circumstances, (y) the Executive has provided the Company with at least thirty (30) days in which to cure the circumstances, and (z) if the Company is not successful in curing the circumstances, the Executive ends the Executive's employment within thirty (30) calendar days following the cure period in (y).

8. *Effect of Termination.*

(a) *All Terminations Other Than by the Company Without Cause or by the Executive With Good Reason*. If the Executive's employment is terminated under any circumstances other than a termination by the Company without Cause or a termination by the Executive with Good Reason (including a voluntary termination by the Executive without Good Reason or a termination by the Company for Cause or due to the Executive's death or Disability), the Company's obligations under this Agreement shall immediately cease and the Executive shall only be entitled to receive (i) the Base Salary that has accrued and to which the Executive is entitled as of the effective date of such termination, to be paid in accordance with the Company's established payroll procedure and applicable law but no later than the next regularly scheduled pay period, (ii) unreimbursed business expenses for which expenses the Executive has timely submitted appropriate documentation in accordance with Section 5 hereof, (iii) any amounts or benefits to which the Executive is then entitled under the terms of the benefit plans then-sponsored by the Company in accordance with their terms (and not accelerated to the extent acceleration does not satisfy Section 409A of the Internal Revenue Code of 1986, as amended, (the "Code")), and (iv) any accrued but unused vacation time through the date of termination, to be paid in accordance with Company policy and applicable law (the payments described in this sentence, the "Accrued Obligations").

(b) *Termination by the Company Without Cause or by the Executive With Good Reason More Than Three Months Prior to or More Than Twelve Months Following a Change in Control*. If the Executive's employment is terminated by the Company without Cause or by the Executive with Good Reason more than three (3) months prior to, or more than twelve (12) months following, a Change in Control (as defined below), the Executive shall be entitled to the Accrued Obligations. In addition, and subject to Exhibit A and the conditions of Section 8(d), the Company shall: (i) continue to pay to the Executive, in accordance with the Company's regularly established payroll procedures, the Executive's Base Salary for a period of twelve (12) months; (ii) pay to the Executive, in a single lump sum on the Payment Date (as defined below) an amount equal to one hundred percent (100%) of the Executive's Target Bonus for the year in which termination occurs, prorated based on a fraction, the numerator of which is the number of days during the calendar year in which the Executive's termination date occurs that the Executive remained employed by the Company and the denominator of which is 365 (such amount, the "Pro Rata Bonus"); and (iii) provided the Executive is eligible for and timely elects to continue receiving group medical insurance pursuant to the "COBRA" law, continue to pay for twelve (12) months following the Executive's termination date or until the Executive has secured other employment or is no longer eligible for coverage under COBRA, whichever occurs first, the share of the premium for health coverage that is paid by the Company for active and similarly-situated employees who receive the same type of coverage, unless the Company's provision of such COBRA payments will violate the nondiscrimination requirements of applicable law, in which case this benefit will not apply (collectively, the "Severance Benefits").

(c) *Termination by the Company Without Cause or by the Executive With Good Reason Within Three Months Prior to or Twelve Months Following a Change in Control*. If the Executive's employment is terminated by the Company without Cause or by the Executive with Good Reason within the period that begins three (3) months prior to and ends twelve (12) months following a Change in Control, then the Executive shall be entitled to the Accrued Obligations. In addition, and subject to Exhibit A and the conditions of Section 8(d), the Company shall: (i) pay to the Executive, in a single lump sum on the Payment Date, an amount equal to the sum of (x) twelve (12) months of the Executive's Base Salary, and (y) one hundred percent (100%) of the Executive's Target Bonus for the year in which termination occurs or, if higher, the Executive's Target Bonus immediately prior to the Change in Control, (ii) pay to the Executive, in a single lump sum on the Payment Date, the Pro Rata Bonus which Pro Rata Bonus, shall, for the avoidance of doubt, be determined by reference to the Executive's Target Bonus for the year in which termination occurs, or, if higher, the Executive's Target Bonus immediately prior to the Change in Control, (iii) provided the Executive is eligible for and timely elects to continue receiving group medical insurance pursuant to the "COBRA" law, continue to pay for twelve (12) months following the Executive's termination date or until the Executive has secured other employment or is no longer eligible for coverage under COBRA, whichever occurs first, the share of the premium for health coverage that is paid by the Company for active and similarly-situated employees who receive the same type of coverage, unless the Company's provision of such COBRA payments will violate the nondiscrimination requirements of applicable law, in which case this benefit will not apply, and (iv) provide that the vesting of the Executive's then-unvested equity awards that vest based solely on the passage of time shall be accelerated, such that all such then-unvested time-based equity awards shall vest and become fully exercisable or non-forfeitable as of the later of the date of the Change in Control and the Executive's termination date (collectively, the "Change in Control Severance Benefits").

(d) *Release*. As a condition of the Executive's receipt of the Severance Benefits or the Change in Control Severance Benefits, as applicable, the Executive must execute and deliver to the Company a separation and release of claims agreement in substantially the form attached hereto as Exhibit B (the "Release"), which Release must become irrevocable within sixty (60) days following the date of the Executive's termination of employment (or such shorter period as may be directed by the Company). The Severance Benefits or the Change in Control Severance Benefits, as applicable, will be paid or commence to be paid in the first regular payroll beginning after the Release becomes effective, provided that if the foregoing sixty (60) day period would end in a calendar year subsequent to the year in which the Executive's employment ends, the Severance Benefits or Change in Control Severance Benefits, as applicable, will not be paid or begin to be paid before the first payroll of the subsequent calendar year (the date the Severance Benefits or Change in Control Severance Benefits, as applicable, are paid or commence pursuant to this sentence, the "Payment Date"). The Executive must continue to comply with all post-employment obligations under law or in any agreement between the Executive and the Company, including the Restrictive Covenant Agreements, any similar agreement with the Company and as set forth in the Release in order to be eligible to receive or continue receiving the Severance Benefits or Change in Control Severance Benefits, as applicable. For the avoidance of doubt, if the Executive's employment is terminated by the Company without Cause or by the Executive with Good Reason prior to a Change in Control, (i) any then-outstanding and unvested time-based equity awards held by the Executive shall remain outstanding (but any vesting shall be suspended) for up to (but no longer than) three (3) months following the date of termination so that, if it is later determined that such termination occurred during the three (3)-month period prior to the closing of a Change in Control and the Executive is entitled to Change in Control acceleration and/or Change in Control Severance Benefits rather than Severance Benefits, the vesting of such awards may be accelerated, in accordance with Section 8(c), immediately prior to the closing of the Change in Control and (ii) any Change in Control Severance Benefits shall be reduced by any Severance Benefits previously paid to the Executive, if it is later determined that the termination occurred during the three (3)-month period prior to the closing of a Change in Control and that the Executive is entitled to Change in Control Severance Benefits rather than Severance Benefits.

(e) *Change in Control Definition*. For purposes of this Agreement, "Change in Control" shall mean the occurrence of any of the following events, provided that such event or occurrence constitutes a change in the ownership or effective control of the Company, or a change in the ownership of a substantial portion of the assets of the Company, as defined in Treasury Regulation §§ 1.409A-3(i)(5)(v), (vi) and (vii): (i) the acquisition by an individual, entity or group (within the meaning of Section 13(d)(3) or 14(d)(2) of the Securities Exchange Act of 1934 (the "Exchange Act")) (a "Person") of beneficial ownership of any capital stock of the Company if, after such acquisition, such Person beneficially owns (within the meaning of Rule 13d-3 under the Exchange Act) fifty percent (50%) or more of either (x) the then-outstanding shares of common stock of the Company (the "Outstanding Company Common Stock") or (y) the combined voting power of the then-outstanding securities of the Company entitled to vote generally in the election of directors (the "Outstanding Company Voting Securities"); provided, however, that for purposes of this subsection (i), the following acquisitions shall not constitute a Change in Control: (1) any acquisition directly from the Company or (2) any acquisition by any entity pursuant to a Business Combination (as defined below) which complies with clauses (x) and (y) of subsection (iii) of this definition; or (ii) a change in the composition of the Board that results in the Continuing Directors (as defined below) no longer constituting a majority of the Board (or, if applicable, the Board of Directors of a successor corporation to the Company), where the term "Continuing Director" means at any date a member of the Board (x) who was a member of the Board on the Effective Date or (y) who was nominated or elected subsequent to such date by at least a majority of the directors who were Continuing Directors at the time of such nomination or election or whose election to the Board was recommended or endorsed by at least a majority of the directors who were Continuing Directors at the time of such nomination or election; provided, however, that there shall be excluded from this clause (y) any individual whose initial assumption of office occurred as a result of an actual or threatened election contest with respect to the election or removal of directors or other actual or threatened solicitation of proxies or consents, by or on behalf of a person other than the Board; or (iii) the consummation of a merger, consolidation, reorganization, recapitalization or share exchange involving the Company, or a sale or other disposition of all or substantially all of the assets of the Company (a "Business Combination"), unless, immediately following such Business Combination, each of the following two (2) conditions is satisfied: (x) all or substantially all of the individuals and entities who were the beneficial owners of the Outstanding Company Common Stock and Outstanding Company Voting Securities immediately prior to such Business Combination beneficially own, directly or indirectly, more than fifty percent (50%) of the then-outstanding shares of common stock and the combined voting power of the then-outstanding securities entitled to vote generally in the election of directors, respectively, of the resulting or acquiring corporation in such Business Combination (which shall include, without limitation, a corporation which as a result of such transaction owns the Company or substantially all of the Company's assets either directly or through one (1) or more subsidiaries) (such resulting or acquiring corporation is referred to herein as the "Acquiring Corporation") in substantially the same proportions as their ownership of the Outstanding Company Common Stock and Outstanding Company Voting Securities, respectively, immediately prior to such Business Combination and (y) no Person (excluding any employee benefit plan (or related trust) maintained or sponsored by the Company or by the Acquiring Corporation) beneficially owns, directly or indirectly, fifty percent (50%) or more of the then-outstanding shares of common stock of the Acquiring Corporation, or of the combined voting power of the then-outstanding securities of such corporation entitled to vote generally in the election of directors (except to the extent that such ownership existed prior to the Business Combination); or (iv) the liquidation or dissolution of the Company.

(f) *Resignation from other Positions*. If, as of the date that the Executive's employment terminates for any reason, the Executive is a member of the Board (or the board of directors of any entity affiliated with the Company), or hold any other offices or positions with the Company (or any entity affiliated with the Company), the Executive shall, unless otherwise requested by the Company, immediately relinquish and/or resign from any such board memberships, offices and positions as of the date the Executive's employment terminates. The Executive agrees to execute such documents and take such other actions as the Company may request to reflect such relinquishments and/or resignation(s).

9. *Absence of Restrictions*. The Executive represents and warrants that the Executive is not bound by any employment contracts, restrictive covenants or other restrictions that prevent (or purports to prevent) the Executive from carrying out the Executive's responsibilities for the Company, or which are in any way inconsistent with any of the terms of this Agreement.

10. *Notice*. Any notice delivered under this Agreement shall be deemed duly delivered three (3) business days after it is sent by registered or certified mail, return receipt requested, postage prepaid, one (1) business day after it is sent for next-business day delivery via a reputable nationwide overnight courier service, or immediately upon hand delivery, in each case to the address of the recipient set forth below.

To Executive:

At the address set forth in the Executive's personnel file

To Company:

Carisma Therapeutics Inc.
3675 Market Street, Suite 200
Philadelphia, Pennsylvania 19104

Either Party may change the address to which notices are to be delivered by giving notice of such change to the other Party in the manner set forth in this Section 10.

11. *Applicable Law and Forum*. This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania (without reference to the conflict of laws provisions thereof). Any action, suit or other legal proceeding arising under or relating to any provision of this Agreement shall be commenced only in a court of the Commonwealth of Pennsylvania (or, if appropriate, a federal court located within the Commonwealth of Pennsylvania), and the Company and the Executive each consent to the exclusive jurisdiction of such a court. The Company and the Executive each hereby irrevocably waives any right to a trial by jury in any action, suit or other legal proceeding arising under or relating to any provision of this Agreement.

12. *Successors and Assigns*. This Agreement shall be binding upon and inure to the benefit of both Parties and their respective successors and assigns, including any corporation with which or into which the Company may be merged or which may succeed to its assets or business; provided, however, that the obligations of the Executive are personal and shall not be assigned by the Executive.

13. *At-Will Employment*. This Agreement shall not be construed as an agreement, either expressed or implied, to employ the Executive for any stated term, and shall in no way alter the Company's policy of employment at will, under which both the Executive and the Company remain free to terminate the employment relationship, with or without cause, at any time, with or without notice. Although the Executive's job duties, title, compensation and benefits, as well as the Company's personnel policies and procedures, may change from time to time, the "at-will" nature of the Executive's employment may only be changed by a written agreement signed by the Executive and a duly authorized representative of the Company, which written agreement expressly states the intention to modify the at-will nature of the Executive's employment, provided, however, that nothing in the foregoing shall alter any rights the Executive may have as set forth in Section 8 above. Similarly, nothing in this Agreement shall be construed as an agreement, either express or implied, to pay the Executive any compensation or grant the Executive any benefit beyond the end of the Executive's employment with the Company, except as explicitly set forth in Section 8 above.

14. *Acknowledgment*. The Executive states and represents that the Executive has had an opportunity to fully discuss and review the terms of this Agreement with an attorney. The Executive further states and represents that the Executive has carefully read this Agreement, understands the contents herein, freely and voluntarily assents to all of the terms and conditions hereof, and signs the Executive's name of the Executive's own free act.

15. *No Oral Modification, Waiver, Cancellation or Discharge*. This Agreement may be amended or modified only by a written instrument executed by both the Company and the Executive. No delay or omission by the Company in exercising any right under this Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

16. *Captions and Pronouns*. The captions of the sections of this Agreement are for convenience of reference only and in no way define, limit or affect the scope or substance of any section of this Agreement. Whenever the context may require, any pronouns used in this Agreement shall include the corresponding masculine, feminine or neuter forms, and the singular forms of nouns and pronouns shall include the plural, and vice versa.

17. *Interpretation*. The Parties agree that this Agreement will be construed without regard to any presumption or rule requiring construction or interpretation against the drafting Party. References in this Agreement to "include" or "including" should be read as though they said "without limitation" or equivalent forms. Except where the context requires otherwise, references in this Agreement to the "Board" shall include any authorized committee thereof.

18. *Severability*. Each provision of this Agreement must be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be prohibited by or invalid under applicable law, such provision will be ineffective only to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Agreement. Moreover, if a court of competent jurisdiction determines any of the provisions contained in this Agreement to be unenforceable because the provision is excessively broad in scope, whether as to duration, activity, geographic application, subject or otherwise, it will be construed, by limiting or reducing it to the extent legally permitted, so as to be enforceable to the extent compatible with then applicable law to achieve the intent of the Parties.

19. *Modified Section 280G Cutback*. Notwithstanding any other provision of this Agreement, except as set forth in Section 19(b), in the event that the Company undergoes a "Change in Ownership or Control" (as defined below), the following provisions shall apply:

(a) The Company shall not be obligated to provide to the Executive any portion of any "Contingent Compensation Payments" (as defined below) that the Executive would otherwise be entitled to receive to the extent necessary to eliminate any "excess parachute payments" (as defined in Section 280G(b)(1) of the Code) for the Executive. For purposes of this Section 19, the Contingent Compensation Payments so eliminated shall be referred to as the "Eliminated Payments" and the aggregate amount (determined in accordance with Treasury Regulation Section 1.280G-1, Q/A-30 or any successor provision) of the Contingent Compensation Payments so eliminated shall be referred to as the "Eliminated Amount."

(b) Notwithstanding the provisions of Section 19(a), no such reduction in Contingent Compensation Payments shall be made if (1) the Eliminated Amount (computed without regard to this sentence) exceeds (2) one hundred percent (100%) of the aggregate present value (determined in accordance with Treasury Regulation Section 1.280G-1, Q/A-31 and Q/A-32 or any successor provisions) of the amount of any additional taxes that would be incurred by the Executive if the Eliminated Payments (determined without regard to this sentence) were paid to the Executive (including state and federal income taxes on the Eliminated Payments, the excise tax imposed by Section 4999 of the Code payable with respect to all of the Contingent Compensation Payments in excess of the Executive's "base amount" (as defined in Section 280G(b)(3) of the Code), and any withholding taxes). The override of such reduction in Contingent Compensation Payments pursuant to this Section 19(b) shall be referred to as a "Section 19(b) Override." For purpose of this paragraph, if any federal or state income taxes would be attributable to the receipt of any Eliminated Payment, the amount of such taxes shall be computed by multiplying the amount of the Eliminated Payment by the maximum combined federal and state income tax rate provided by law.

(c) For purposes of this Section 19 the following terms shall have the following respective meanings:

(i) "Change in Ownership or Control" shall mean a change in the ownership or effective control of the Company or in the ownership of a substantial portion of the assets of the Company determined in accordance with Section 280G(b)(2) of the Code.

(ii) "Contingent Compensation Payment" shall mean any payment (or benefit) in the nature of compensation that is made or made available (under this Agreement or otherwise) to or for the benefit of a "disqualified individual" (as defined in Section 280G(c) of the Code) and that is contingent (within the meaning of Section 280G(b)(2)(A)(i) of the Code) on a Change in Ownership or Control of the Company.

(d) Any payments or other benefits otherwise due to the Executive following a Change in Ownership or Control that could reasonably be characterized (as determined by the Company) as Contingent Compensation Payments (the "Potential Payments") shall not be made until the dates provided for in this Section 19(d). Within thirty (30) days after each date on which the Executive first becomes entitled to receive (whether or not then due) a Contingent Compensation Payment relating to such Change in Ownership or Control, the Company shall determine and notify the Executive (with reasonable detail regarding the basis for its determinations) (1) which Potential Payments constitute Contingent Compensation Payments, (2) the Eliminated Amount and (3) whether the Section 19(b) Override is applicable. Within thirty (30) days after delivery of such notice to the Executive, the Executive shall deliver a response to the Company (the "Executive Response") stating either (A) that the Executive agrees with the Company's determination pursuant to the preceding sentence or (B) that the Executive disagrees with such determination, in which case the Executive shall set forth (x) which Potential Payments should be characterized as Contingent Compensation Payments, (y) the Eliminated Amount, and (z) whether the Section 19(b) Override is applicable. In the event that the Executive fails to deliver an Executive Response on or before the required date, the Company's initial determination shall be final. If and to the extent that any Contingent Compensation Payments are required to be treated as Eliminated Payments pursuant to this Section 19, then the payments shall be reduced or eliminated, as determined by the Company, in the following order: (i) any cash payments, (ii) any taxable benefits, (iii) any nontaxable benefits, and (iv) any vesting of equity awards in each case in reverse order beginning with payments or benefits that are to be paid the farthest in time from the date that triggers the applicability of the excise tax, to the extent necessary to maximize the Eliminated Payments. If the Executive states in the Executive Response that the Executive agrees with the Company's determination, the Company shall make the Potential Payments to the Executive within three (3) business days following delivery to the Company of the Executive Response (except for any Potential Payments which are not due to be made until after such date, which Potential Payments shall be made on the date on which they are due). If the Executive states in the Executive Response that the Executive disagrees with the Company's determination, then, for a period of sixty (60) days following delivery of the Executive Response, the Executive and the Company shall use good faith efforts to resolve such dispute. If such dispute is not resolved within such 60-day period, such dispute shall be settled exclusively by arbitration as provided in Section 11 of this Agreement. The Company shall, within three (3) business days following delivery to the Company of the Executive Response, make to the Executive those Potential Payments as to which there is no dispute between the Company and the Executive regarding whether they should be made (except for any such Potential Payments which are not due to be made until after such date, which Potential Payments shall be made on the date on which they are due). The balance of the Potential Payments shall be made within three (3) business days following the resolution of such dispute.

The provisions of this Section 19 are intended to apply to any and all payments or benefits available to the Executive under this Agreement or any other agreement or plan under which the Executive may receive Contingent Compensation Payments.

20. *Entire Agreement*. Except as expressly provided in the Merger Agreement and any other agreements to which the Executive is or will be party in connection with the Transaction, this Agreement constitutes the entire agreement between the Parties and supersedes and replaces all prior agreements and understandings, whether written or oral, relating to the subject matter of this Agreement, including, without limitation, the Prior Agreement; provided, however, and for the avoidance of doubt, nothing herein shall be deemed to supersede the Restrictive Covenant Agreements, which remain in full force and effect as set forth in Section 6 above.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the day and year set forth above.

Carisma Therapeutics Inc.

By: /s/ Steven Kelly
Name: Steven Kelly
Title: Chief Executive Officer

EXECUTIVE:

/s/ Michael Klichinsky
Michael Klichinsky

EXHIBIT A

Payments Subject to Section 409A

1. Subject to this Exhibit A, any severance payments or benefits that may be due under the Agreement shall begin only upon the date of the Executive's "separation from service" (determined as set forth below) which occurs on or after the termination of the Executive's employment. The following rules shall apply with respect to distribution of the severance payments or benefits, if any, to be provided to the Executive under the Agreement, as applicable:

(a) It is intended that each installment of the severance payments or benefits provided under the Agreement shall be treated as a separate "payment" for purposes of Section 409A of the Internal Revenue Code ("Section 409A"). Neither the Company nor the Executive shall have the right to accelerate or defer the delivery of any such payments or benefits except to the extent specifically permitted or required by Section 409A.

(b) If, as of the date of the Executive's "separation from service" from the Company, the Executive is not a "specified employee" (within the meaning of Section 409A), then each installment of the severance payments or benefits shall be made on the dates and terms set forth in the letter agreement.

(c) If, as of the date of the Executive's "separation from service" from the Company, the Executive is a "specified employee" (within the meaning of Section 409A), then:

(i) Each installment of the severance payments or benefits due under the Agreement that, in accordance with the dates and terms set forth herein, will in all circumstances, regardless of when the Executive's separation from service occurs, be paid within the short-term deferral period (as defined under Section 409A) shall be treated as a short-term deferral within the meaning of Treasury Regulation Section 1.409A-1(b)(4) to the maximum extent permissible under Section 409A and shall be paid on the dates and terms set forth in the Agreement; and

(ii) Each installment of the severance payments or benefits due under the Agreement that is not described in this Exhibit A, Section 1(c)(i) and that would, absent this subsection, be paid within the six (6)-month period following the Executive's "separation from service" from the Company shall not be paid until the date that is six (6) months and one day after such separation from service (or, if earlier, the Executive's death), with any such installments that are required to be delayed being accumulated during the six (6)-month period and paid in a lump sum on the date that is six months and one day following the Executive's separation from service and any subsequent installments, if any, being paid in accordance with the dates and terms set forth herein; provided, however, that the preceding provisions of this sentence shall not apply to any installment of payments or benefits if and to the maximum extent that that such installment is deemed to be paid under a separation pay plan that does not provide for a deferral of compensation by reason of the application of Treasury Regulation 1.409A-1(b)(9)(iii) (relating to separation pay upon an involuntary separation from service). Any installments that qualify for the exception under Treasury Regulation Section 1.409A-1(b)(9)(iii) must be paid no later than the last day of the Executive's second taxable year following the taxable year in which the separation from service occurs.

2. The determination of whether and when the Executive's separation from service from the Company has occurred shall be made and in a manner consistent with, and based on the presumptions set forth in, Treasury Regulation Section 1.409A-1(h). Solely for purposes of Section 2 of this Exhibit A, "Company" shall include all persons with whom the Company would be considered a single employer under Section 414(b) and 414(c) of the Code.

3. All reimbursements and in-kind benefits provided under the Agreement shall be made or provided in accordance with the requirements of Section 409A to the extent that such reimbursements or in-kind benefits are subject to Section 409A, including, where applicable, the requirements that (i) any reimbursement is for expenses incurred during the Executive's lifetime (or during a shorter period of time specified in the Agreement), (ii) the amount of expenses eligible for reimbursement during a calendar year may not affect the expenses eligible for reimbursement in any other calendar year, (iii) the reimbursement of an eligible expense will be made on or before the last day of the calendar year following the year in which the expense is incurred and (iv) the right to reimbursement is not subject to set off or liquidation or exchange for any other benefit.

4. The Company makes no representation or warranty and shall have no liability to the Executive or to any other person if any of the provisions of the Agreement (including this Exhibit A) are determined to constitute deferred compensation subject to Section 409A but that do not satisfy an exemption from, or the conditions of, that section.

5. The Agreement is intended to comply with, or be exempt from, Section 409A and shall be interpreted accordingly.

[Remainder of page intentionally left blank.]

EXHIBIT B[1]

Sample Separation and Release Agreement

[Insert Date]
[Insert Name]

Dear **[Insert Name]**:

In connection with the termination of your employment with [Carisma Therapeutics Inc.] (the "Company") on **[Separation Date]**, you are eligible to receive [Severance Benefits] [Change in Control Severance Benefits] as described in Section 8 of the employment agreement executed between you and the Company dated _____ (the "Employment Agreement") if you sign and return this letter agreement to me by **[Return Date –7/21/45 days from date of receipt of this letter agreement] [and it becomes binding between you and the Company**]. By signing and returning this letter agreement [**and not revoking your acceptance]**, you will be agreeing to the terms and conditions set forth in the numbered paragraphs below, including the release of claims set forth in paragraph 2. Therefore, you are advised to consult with an attorney before signing this letter agreement and you have been given at least [**seven/twenty-one (21)/forty-five (45)]**[2] days to do so. [**If you sign this letter agreement, you may change your mind and revoke your agreement during the seven (7) day period after you have signed it (the "Revocation Period") by notifying me in writing. If you do not so revoke, this letter agreement will become a binding agreement between you and the Company upon the expiration of the Revocation Period.]**

Although your receipt of the [Severance Benefits] [Change in Control Severance Benefits] is expressly conditioned on your entering into this letter agreement, the following will apply regardless of whether or not you do so:

- As of the Separation Date, all salary payments from the Company will cease and any benefits you had as of the Separation Date under Company-provided benefit plans, programs, or practices will terminate, except as required by federal or state law.

- You will receive payment for your final wages and any unused vacation time accrued through the Separation Date.

- You may, if eligible and at your own cost, elect to continue receiving group medical insurance pursuant to applicable "COBRA" law. Please consult the COBRA materials to be provided under separate cover for details regarding these benefits.

[1] Note: The Company may revise this release agreement in its sole discretion to reflect changes in law, additional statutes or claims, benefits, or employee's circumstances, so that the Company receives the benefit of the most complete release of claims that is legally permissible (without releasing employee's right to receive the Severance Benefits), and the Company may also change the timing, if required to obtain such release. This footnote and the other footnotes herein are part of the form of release and are to be removed only when the Company finalizes the letter agreement for execution.

[2] Consideration period depends upon circumstances of separation.

- You are obligated to keep confidential and not to use or disclose any and all non-public information concerning the Company that you acquired during the course of your employment with the Company, including any non-public information concerning the Company's business affairs, business prospects, and financial condition, except as otherwise permitted by paragraph 9 below. Further, you remain subject to any and all continuing confidentiality, non-competition and/or non-solicitation obligations that you may have pursuant to any previous agreement with the Company, including, as may be applicable and without limitation, the Employment Agreement and the Invention and Non-Disclosure Agreement and Non-Competition and Non-Solicitation Agreement (the "Restrictive Covenant Agreements") referenced therein.

- You must return to the Company no later than the Separation Date all Company property.

If you elect to timely sign and return this letter agreement, comply with all of your obligations hereunder, and do not revoke your acceptance in writing within the Revocation Period, the following numbered paragraphs set forth the terms and conditions that will also apply:

1. **Severance Benefits** The Company will provide you with the [as may be applicable [Severance Benefits] or [Change in Control Severance Benefits]] set forth in Section 8 of the Employment Agreement (the ["Severance Benefits"] ["Change in Control Severance Benefits"]), **s**ubject to and in accordance with the terms and conditions thereof.

2. **Release** – In consideration of the [Severance Benefits] [Change in Control Severance Benefits], which you acknowledge you would not otherwise be entitled to receive, you hereby fully, forever, irrevocably and unconditionally release, remise and discharge the Company, its affiliates, subsidiaries, parent companies, predecessors, and successors, and all of their respective past and present officers, directors, stockholders, partners, members, managers, employees, agents, representatives, plan administrators, attorneys, insurers and fiduciaries (each in their individual and corporate capacities) (collectively, the "Released Parties") from any and all claims, charges, complaints, demands, actions, causes of action, suits, rights, debts, sums of money, costs, accounts, reckonings, covenants, contracts, agreements, promises, doings, omissions, damages, executions, obligations, liabilities, and expenses (including attorneys' fees and costs), of every kind and nature that you ever had or now have against any or all of the Released Parties, whether known or unknown, including, but not limited to, any and all claims arising out of or relating to your employment with and/or separation from the Company, including, but not limited to, all claims under Title VII of the Civil Rights Act of 1964, 42 U.S.C. § 2000e et seq., the Americans With Disabilities Act of 1990, 42 U.S.C. § 12101 et seq., **[the Age Discrimination in Employment Act, 29 U.S.C. § 621 et seq.,]** the Genetic Information Nondiscrimination Act of 2008, 42 U.S.C. § 2000ff et seq., the Family and Medical Leave Act, 29 U.S.C. § 2601 et seq., the Worker Adjustment and Retraining Notification Act ("WARN"), 29 U.S.C. § 2101 et seq., the Rehabilitation Act of 1973, 29 U.S.C. § 701 et seq., Executive Order 11246, Executive Order 11141, the Fair Credit Reporting Act, 15 U.S.C. § 1681 et seq., and the Employee Retirement Income Security Act of 1974 ("ERISA"), 29 U.S.C. § 1001 et seq., all as amended; all claims arising out of the Pennsylvania Human Relations Act, 43 Pa. Stat. § 951 et seq., the Pennsylvania Equal Pay Law, 43 Pa. Stat. § 336.1 et seq., the Pennsylvania Wage Payment and Collection Law, 43 Pa. Stat. § 251 et seq., and the Pennsylvania Whistleblower Law, 43 Pa. Stat. § 1421 et seq., all as amended; **[Insert any other applicable federal, state and local citations at the time of termination;]** all common law claims including, but not limited to, actions in defamation, intentional infliction of emotional distress, misrepresentation, fraud, wrongful discharge, and breach of contract (including, without limitation, all claims arising out of or relating to the Employment Agreement); all claims to any ownership interest in the Company, contractual or otherwise; all state and federal whistleblower claims to the maximum extent permitted by law; and any claim or damage arising out of your employment with and/or separation from the Company (including a claim for retaliation) under any common law theory or any federal, state or local statute or ordinance not expressly referenced above; provided, however, that nothing in this letter agreement: (i) prevents you from filing a charge with, cooperating with, or participating in any investigation or proceeding before, the Equal Employment Opportunity Commission or a state fair employment practices agency (except that you acknowledge that you may not recover any monetary benefits in connection with any such charge, investigation, or proceeding, and you further waive any rights or claims to any payment, benefit, attorneys' fees or other remedial relief in connection with any such charge, investigation or proceeding), (ii) deprives you of any accrued benefits to which you have acquired a vested right under any employee benefit plan or policy, stock plan or deferred compensation arrangement, any health care continuation to the extent required by applicable law or any agreement, or any right to severance benefits or any other benefits due to you upon termination of employment that you may have under the Employment Agreement; or (iii) deprives you of any rights you may have to be indemnified by the Company as provided in any agreement between the Company and you, or pursuant to the Company's Certificate of Incorporation or by-laws (recognizing that such indemnification is not guaranteed by this letter agreement and shall be governed by the instrument, if any, providing for such indemnification).

3. **Continuing Obligations** – You acknowledge and reaffirm your confidentiality and nondisclosure

obligations discussed above, as well as any and all confidentiality, non-competition, nonsolicitation obligations and/or assignment of inventions set forth in any previous agreement you may have with the Company (including without limitation the Employment Agreement and the Restrictive Covenants Agreements referenced therein), which survive your separation from employment with the Company.

4. **Non-Disparagement** – You understand and agree that, to the extent permitted by law and except as otherwise permitted by paragraph 9 below, you will not, in public or private, make any false, disparaging, derogatory or defamatory statements, online (including, without limitation, on any social media, networking, or employer review site) or otherwise, to any person or entity, including, but not limited to, any media outlet, industry group, financial institution or current or former employee, board member, consultant, client or customer of the Company, regarding the Company or any of the other Released Parties, or regarding the Company's business affairs, business prospects, or financial condition.

5. **Cooperation** – You agree that, to the extent permitted by law, you shall cooperate fully with the Company in: (i) any internal investigation; (ii) any investigation, defense or prosecution of any claims or actions which already have been brought, are currently pending, or which may be brought in the future against the Company by a third party or by or on behalf of the Company against any third party, whether before a state or federal court, any state or federal government agency, or a mediator or arbitrator; or (iii) any other administrative, regulatory, or judicial inquiry, investigation, proceeding or arbitration. Your full cooperation hereunder shall include, but not be limited to, making yourself available to the Company upon reasonable notice for interviews and factual investigations; appearing at the Company's request to give testimony without requiring service of a subpoena or other legal process; volunteering to the Company pertinent information; and turning over all relevant documents which are in or may come into your possession. The term "cooperation" does not mean that you must provide information that is favorable to the Company; it means only that you will provide truthful information within your knowledge and possession upon request of the Company. The Company will reimburse you for all reasonable and documented out-of-pocket expenses that you incur at the Company's request to comply with this paragraph. You further agree that, to the extent permitted by law, you will notify the Company promptly in the event that you are served with a subpoena (other than a subpoena issued by a government agency), or in the event that you are asked to provide a third party (other than a government agency) with information concerning any actual or potential complaint or claim against the Company.

6. **Return of Company Property** – You confirm that you have returned to the Company all keys, files, records (and copies thereof), equipment (including, but not limited to, computer hardware, software, printers, flash drives and other storage devices, wireless handheld devices, cellular phones, tablets, etc.), Company identification, and any other Company owned property in your possession or control, and that you have left intact all, and have otherwise not destroyed, deleted, or made inaccessible to the Company any, electronic Company documents, including, but not limited to, those that you developed or helped to develop during your employment, and that you have not (a) retained any copies in any form or media; (b) maintained access to any copies in any form, media, or location; (c) stored any copies in any physical or electronic locations that are not readily accessible or not known to the Company or that remain accessible to you; or (d) sent, given, or made accessible any copies to any persons or entities that the Company has not authorized to receive such electronic or hard copies. You further confirm that you have cancelled all accounts for your benefit, if any, in the Company's name, including but not limited to, credit cards, telephone charge cards, cellular phone accounts, and computer accounts.

7. **Business Expenses and Final Compensation** – You acknowledge that you have been reimbursed by the Company for all business expenses incurred in conjunction with the performance of your employment and that no other reimbursements are owed to you. You further acknowledge that you have received payment in full for all services rendered in conjunction with your employment by the Company, including payment for all wages, bonuses, and accrued, unused vacation time, and that no other compensation is owed to you except as provided herein.

8. **Confidentiality** – You understand and agree that, to the extent permitted by law and except as otherwise permitted by paragraph 9 below, the terms and contents of this letter agreement, and the contents of the negotiations and discussions resulting in this letter agreement, shall be maintained as confidential by you and your agents and representatives and shall not be disclosed except as otherwise agreed to in writing by the Company.

9. **Scope of Disclosure Restrictions** – Nothing in this letter agreement or elsewhere prohibits you from communicating with government agencies about possible violations of federal, state, or local laws or otherwise providing information to government agencies, filing a complaint with government agencies, or participating in government agency investigations or proceedings. You are not required to notify the Company of any such communications; provided, however, that nothing herein authorizes the disclosure of information you obtained through a communication that was subject to the attorney-client privilege. Further, notwithstanding your confidentiality and nondisclosure obligations, you are hereby advised as follows pursuant to the Defend Trade Secrets Act: "An individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that (A) is made (i) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual (A) files any document containing the trade secret under seal; and (B) does not disclose the trade secret, except pursuant to court order."

10. **Amendment and Waiver** – This letter agreement shall be binding upon the parties and may not be modified in any manner, except by an instrument in writing of concurrent or subsequent date signed by duly authorized representatives of the parties hereto. This letter agreement is binding upon and shall inure to the benefit of the parties and their respective agents, assigns, heirs, executors, successors and administrators. No delay or omission by the Company in exercising any right under this letter agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

11. **Validity** – Should any provision of this letter agreement be declared or be determined by any court of competent jurisdiction to be illegal or invalid, the validity of the remaining parts, terms or provisions shall not be affected thereby and said illegal or invalid part, term or provision shall be deemed not to be a part of this letter agreement.

12. **Nature of Agreement –** You understand and agree that this letter agreement is a severance agreement and does not constitute an admission of liability or wrongdoing on the part of the Company.

13. **Acknowledgments –** You acknowledge that you have been given at least **[seven (7) / twenty-one (21) / forty-five (45)]** days to consider this letter agreement, and that the Company is hereby advising you to consult with an attorney of your own choosing prior to signing this letter agreement. **[You understand that you may revoke this letter agreement during the Revocation Period by notifying me in writing, and the letter agreement shall not be effective or enforceable until the expiration of the Revocation Period. You understand and agree that by entering into this letter agreement, you are waiving any and all rights or claims you might have under the Age Discrimination in Employment Act, as amended by the Older Workers Benefit Protection Act, and that you have received consideration beyond that to which you were previously entitled.]**

14. **[Eligibility for Severance Program – Attached to this letter agreement as Attachment A is a description of (i) any class, unit or group of individuals covered by the program of severance benefits which the Company has offered to you, and any applicable time limits regarding such severance benefit program; and (ii) the job title and ages of all individuals eligible or selected for such severance benefit program, and the ages of all individuals in the same job classification or organizational unit who are not eligible or who were not selected for such severance benefit program.]**

15. **Voluntary Assent** – You affirm that no other promises or agreements of any kind have been made to or with you by any person or entity whatsoever to cause you to sign this letter agreement, and that you fully understand the meaning and intent of this letter agreement. You state and represent that you have had an opportunity to fully discuss and review the terms of this letter agreement with an attorney. You further state and represent that you have carefully read this letter agreement, understand the contents herein, freely and voluntarily assent to all of the terms and conditions hereof, and sign your name of your own free act.

16. **Applicable Law** – This letter agreement shall be interpreted and construed by the laws of the Commonwealth of Pennsylvania, without regard to conflict of laws provisions. You hereby irrevocably submit to and acknowledge and recognize the jurisdiction of the courts of the Commonwealth of Pennsylvania, or if appropriate, a federal court located in the Commonwealth of Pennsylvania (which courts, for purposes of this letter agreement, are the only courts of competent jurisdiction), over any suit, action or other proceeding arising out of, under or in connection with this letter agreement or the subject matter hereof. You hereby irrevocably waive any right to a trial by jury in any action, suit or other legal proceeding arising under or relating to any provision of this letter agreement.

17. **Entire Agreement** – This letter agreement contains and constitutes the entire understanding and agreement between the parties hereto with respect to your severance benefits and the settlement of claims against the Company and cancels all previous oral and written negotiations, agreements, and commitments in connection therewith.

18. **Tax Acknowledgement** – In connection with the [Severance Benefits] [Change in Control Severance Benefits], the Company shall withhold and remit to the tax authorities the amounts required under applicable law, and you shall be responsible for all applicable taxes with respect to such [Severance Benefits] [Change in Control Severance Benefits] under applicable law. You acknowledge that you are not relying upon the advice or representation of the Company with respect to the tax treatment of the [Severance Benefits] [Change in Control Severance Benefits].

[Signature Page Follows]

If you have any questions about the matters covered in this letter agreement, please call me.

Very truly yours,

By: _____
[Name]
[Title]

I hereby agree to the terms and conditions set forth above. **[I have been given at least [twenty-one (21) / forty-five (45)] days to consider this letter agreement and I have chosen to execute this on the date below. I intend that this letter agreement will become a binding agreement between me and the Company if I do not revoke my acceptance during the Revocation Period.]**

_____
[Insert Name]

_____
Date

To be returned in a timely manner as set forth on the first page of this letter agreement, but not to be signed before the close of business on your last day of employment.[3]

[3] Note: All footnotes will be removed from the final execution version of this agreement.

Exhibit 10.10

2017 Stock Incentive Plan

of

CARMA Therapeutics Inc.

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2017 STOCK INCENTIVE PLAN

OF

CARMA THERAPEUTICS INC.

1. Purpose

The purpose of this 2017 Stock Incentive Plan (the "**Plan**") of CARMA Therapeutics Inc., a Delaware corporation (the "**Company**"), is to advance the interests of the Company's stockholders by enhancing the Company's ability to attract, retain and motivate persons who are expected to make important contributions to the Company and by providing such persons with equity ownership opportunities and performance-based incentives that are intended to better align the interests of such persons with those of the Company's stockholders. Except where the context otherwise requires, the term "**Company**" shall include any of the Company's present and future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Internal Revenue Code of 1986, as amended, and any regulations thereunder (the "**Code**") and any other business venture (including, without limitation, joint venture or limited liability company) in which the Company has a controlling interest, as determined by the Board of Directors of the Company (the "**Board**"); *provided*, *however*, that such other business ventures shall be limited to entities that, where required by Section 409A of the Code, are eligible issuers of service recipient stock (as defined in Treas. Reg. Section 1.409A-1(b)(5)(iii)(E), or applicable successor regulation).

2. Eligibility

All of the Company's employees, officers and directors, as well as consultants and advisors to the Company (as such terms consultants and advisors are defined and interpreted for purposes of Rule 701 under the Securities Act of 1933, as amended (the "**Securities Act**") (or any successor rule)) are eligible to be granted Awards under the Plan. Each person who is granted an Award under the Plan is deemed a "**Participant**." "**Award**" means Options (as defined in Section 5), SARs (as defined in Section 6), Restricted Stock (as defined in Section 7), Restricted Stock Units (as defined in Section 7) and Other Stock-Based Awards (as defined in Section 8).

3. Administration and Delegation

(a) Administration by the Board. The Plan will be administered by the Board. The Board shall have authority to grant Awards and to adopt, amend and repeal such administrative rules, guidelines and practices relating to the Plan as it shall deem advisable. The Board may construe and interpret the terms of the Plan and any Award agreements entered into under the Plan. The Board may correct any defect, supply any omission or reconcile any inconsistency in the Plan or any Award in the manner and to the extent it shall deem expedient to carry the Plan into effect and it shall be the sole and final judge of such expediency. All actions and decisions by the Board with respect to the Plan and any Awards shall be made in the Board's discretion and shall be final and binding on all Participants and any other persons having or claiming any interest in the Plan or in any Award.

(b) Appointment of Committees. To the extent permitted by applicable law, the Board may delegate any or all of its powers under the Plan to one or more committees or subcommittees of the Board (each, a "**Committee**"). All references in the Plan to the "**Board**" shall mean the Board or a Committee to the extent that the Board's powers or authority under the Plan have been delegated to such Committee.

4. Stock Available for Awards

(a) Number of Shares. Subject to adjustment under Section 9, Awards may be made under the Plan for up to 244,552 shares of common stock, $0.0001 par value per share, of the Company (the "**Common Stock**"), any or all of which Awards may be in the form of Incentive Stock Options (as defined in Section 5(b)). If any Award expires or is terminated, surrendered or canceled without having been fully exercised, is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at the original issuance price pursuant to a contractual repurchase right), or results in any Common Stock not being issued, the unused Common Stock subject to such Award shall again be available for the grant of Awards under the Plan. Further, shares of Common Stock tendered to the Company by a Participant to exercise an Award or to satisfy tax withholding obligations arising with respect to an Award shall be added to the number of shares of Common Stock available for the grant of Awards under the Plan. However, in the case of Incentive Stock Options, the two immediately preceding sentences shall be subject to any limitations under the Code. Shares issued under the Plan may consist in whole or in part of authorized but unissued shares or treasury shares.

(b) Substitute Awards. In connection with a merger or consolidation of an entity with the Company or the acquisition by the Company of property or stock of an entity, the Board may grant Awards in substitution for any options or other stock or stock-based awards granted by such entity or an affiliate thereof. Substitute Awards may be granted on such terms as the Board deems appropriate in the circumstances, notwithstanding any limitations on Awards contained in the Plan. Substitute Awards shall not count against the overall share limit set forth in Section 4(a), except as may be required by reason of Section 422 and related provisions of the Code.

5. Stock Options

(a) General. The Board may grant options to purchase Common Stock (each, an "**Option**") and determine the number of shares of Common Stock to be subject to each Option, the exercise price of each Option and the conditions and limitations applicable to the exercise of each Option, including conditions relating to applicable federal or state securities laws, as it considers necessary or advisable.

(b) Incentive Stock Options. An Option that the Board intends to be an "incentive stock option" as defined in Section 422 of the Code (an "**Incentive Stock Option**") shall only be granted to employees of CARMA Therapeutics Inc., any of CARMA Therapeutics Inc.'s present and future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Code, and any other entities the employees of which are eligible to receive Incentive Stock Options under the Code, and shall be subject to and shall be construed consistently with the requirements of Section 422 of the Code. An Option that is not intended to be an Incentive Stock Option shall be designated non-statutory stock option (a "**Nonstatutory Stock Option)**." The Company shall have no liability to a Participant, or any other person, if an Option (or any part thereof) that is intended to be an Incentive Stock Option is not an Incentive Stock Option or if the Company converts an Incentive Stock Option to a Nonstatutory Stock Option.

(c) Exercise Price. The Board shall establish the exercise price of each Option and specify the exercise price in the applicable Option agreement. The exercise price shall be not less than 100% of the Grant Date Fair Market Value (as defined below) of the Common Stock on the date the Option is granted; provided that if the Board approves the grant of an Option with an exercise price to be determined on a future date, the exercise price shall not be less than 100% of the Grant Date Fair Market Value on such future date. The "**Grant Date Fair Market Value**" of a share of Common Stock for purposes of the Plan will be determined as follows:

(1) if the Common Stock is not publicly traded, the Board will determine the Fair Market Value for purposes of the Plan using any measure of value it determines to be appropriate (including, as it considers appropriate, relying on appraisals) in a manner consistent with the valuation principles under Code Section 409A, except as the Board may expressly determine otherwise;

(2) if the Common Stock is listed on a national securities exchange, the closing sale price (for the primary trading session) on the date of grant; or

(3) if the Common Stock is not listed on any such exchange, the average of the closing bid and asked prices as reported by an authorized OTCBB market data vendor as listed on the OTCBB website (otcbb.com) on the date of grant.

For any date that is not a trading day, the Grant Date Fair Market Value of a share of Common Stock for such date will be determined by using the closing sale price or average of the bid and asked prices, as appropriate, for the immediately preceding trading day and with the timing in the formulas above adjusted accordingly. The Board can substitute a particular time of day or other measure of "closing sale price" or "bid and asked prices" if appropriate because of exchange or market procedures or can, in its discretion, use weighted averages either on a daily basis or such longer period as complies with Code Section 409A.

The Board has discretion to determine the Grant Date Fair Market Value for purposes of the Plan, and all Awards are conditioned on the applicable Participant's agreement that the Board's determination is conclusive and binding even though others might make a different determination.

(d) Duration of Options. Each Option shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable option agreement; *provided*, *however*, that no Option will be granted with a term in excess of 10 years.

(e) Exercise of Options. Options may be exercised by delivery to the Company of a notice of exercise in a form of notice (which may be electronic) approved by the Company, together with payment in full (in the manner specified in Section 5(f)) of the exercise price for the number of shares for which the Option is exercised. Shares of Common Stock subject to the Option will be delivered by the Company as soon as practicable following exercise.

(f) Payment Upon Exercise. Common Stock purchased upon the exercise of an Option granted under the Plan shall be paid for as follows:

(1) in cash or by check, payable to the order of the Company;

(2) when the Common Stock is registered under the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), except as may otherwise be provided in the applicable Option agreement or approved by the Board, in its discretion, by (i) delivery of an irrevocable and unconditional undertaking by a creditworthy broker to deliver promptly to the Company sufficient funds to pay the exercise price and any required tax withholding or (ii) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a creditworthy broker to deliver promptly to the Company cash or a check sufficient to pay the exercise price and any required tax withholding;

(3) when the Common Stock is registered under the Exchange Act and to the extent provided for in the applicable Option agreement or approved by the Board, in its discretion, by delivery (either by actual delivery or attestation) of shares of Common Stock owned by the Participant valued at their fair market value (valued in the manner determined by (or in a manner approved by) the Board), *provided* (i) such method of payment is then permitted under applicable law, (ii) such Common Stock, if acquired directly from the Company, was owned by the Participant for such minimum period of time, if any, as may be established by the Board in its discretion and (iii) such Common Stock is not subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements;

(4) to the extent provided for in the applicable Nonstatutory Stock Option agreement or approved by the Board in its discretion, by delivery of a notice of "net exercise" to the Company, as a result of which the Participant would receive (i) the number of shares underlying the portion of the Option being exercised, less (ii) such number of shares as is equal to (A) the aggregate exercise price for the portion of the Option being exercised divided by (B) the fair market value of the Common Stock (valued in the manner determined by (or in a manner approved by) the Board) on the date of exercise;

(5) to the extent permitted by applicable law and provided for in the applicable Option agreement or approved by the Board, in its discretion, by (i) delivery of a promissory note of the Participant to the Company on terms determined by the Board, or (ii) payment of such other lawful consideration as the Board may determine; or

(6) by any combination of the above permitted forms of payment.

6. Stock Appreciation Rights

(a) General. The Board may grant Awards consisting of stock appreciation rights ("**SARs**") entitling the Participant, upon exercise, to receive an amount of Common Stock or cash or a combination thereof (such form to be determined by the Board) determined by reference to appreciation, from and after the date of grant, in the fair market value of a share of Common Stock (valued in the manner determined by (or in a manner approved by) the Board) over the measurement price established pursuant to Section 6(b). The date as of which such appreciation is determined shall be the exercise date.

(b) Measurement Price. The Board shall establish the measurement price of each SAR and specify it in the applicable SAR agreement. The measurement price shall not be less than 100% of the Grant Date Fair Market Value of a share of Common Stock on the date the SAR is granted; *provided*, that if the Board approves the grant of an SAR effective as of a future date, the measurement price shall not be less than 100% of the Grant Date Fair Market Value on such future date.

(c) Duration of SARs. Each SAR shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable SAR agreement; *provided*, *however*, that no SAR will be granted with a term in excess of 10 years.

(d) Exercise of SARs. SARs may be exercised by delivery to the Company of a notice of exercise in a form (which may be electronic) approved by the Company, together with any other documents required by the Board.

7. Restricted Stock; Restricted Stock Units

(a) General. The Board may grant Awards entitling Participants to acquire shares of Common Stock ("**Restricted Stock**"), subject to the right of the Company to repurchase all or part of such shares at their issue price or other stated or formula price (or to require forfeiture of such shares if issued at no cost) from the Participant in the event that conditions specified by the Board in the applicable Award are not satisfied prior to the end of the applicable restriction period or periods established by the Board for such Award. The Board may also grant Awards entitling the Participant to receive shares of Common Stock or cash to be delivered at the time such Award vests ("**Restricted Stock Units**") (Restricted Stock and Restricted Stock Units are each referred to herein as a "**Restricted Stock Award**").

(b) Terms and Conditions for All Restricted Stock Awards. The Board shall determine the terms and conditions of a Restricted Stock Award, including the conditions for vesting and repurchase (or forfeiture) and the issue price, if any.

(c) Additional Provisions Relating to Restricted Stock.

(1) Dividends. Unless otherwise provided in the applicable Award agreement, any dividends (whether paid in cash, stock or property) declared and paid by the Company with respect to shares of Restricted Stock ("**Accrued Dividends**") shall be paid to the Participant only if and when such shares become free from the restrictions on transferability and forfeitability that apply to such shares. Each payment of Accrued Dividends will be made no later than the end of the calendar year in which the dividends are paid to stockholders of that class of stock or, if later, the 15th day of the third month following the lapsing of the restrictions on transferability and the forfeitability provisions applicable to the underlying shares of Restricted Stock.

(2) Stock Certificates. The Company may require that any stock certificates issued in respect of shares of Restricted Stock, as well as dividends or distributions paid on such Restricted Stock, shall be deposited in escrow by the Participant, together with a stock power endorsed in blank, with the Company (or its designee). At the expiration of the applicable restriction periods, the Company (or such designee) shall deliver the certificates no longer subject to such restrictions to the Participant or if the Participant has died, to Participant's Designated Beneficiary. "**Designated Beneficiary**" means (i) the beneficiary designated, in a manner determined by the Board, by a Participant to receive amounts due or exercise rights of the Participant in the event of the Participant's death or (ii) in the absence of an effective designation by a Participant, "**Designated Beneficiary**" means the Participant's estate.

(d) Additional Provisions Relating to Restricted Stock Units.

(1) Settlement. Upon the vesting of and/or lapsing of any other restrictions (i.e., settlement) with respect to each Restricted Stock Unit, the Participant shall be entitled to receive from the Company the number of shares of Common Stock specified in the Award agreement or (if so provided in the applicable Award agreement or otherwise determined by the Board) an amount of cash equal to the fair market value (valued in the manner determined by (or in a manner approved by) the Board) of such number of shares of Common Stock or a combination thereof. The Board may, in its discretion, provide that settlement of Restricted Stock Units shall be deferred, on a mandatory basis or at the election of the Participant in a manner that complies with Section 409A of the Code.

(2) Voting Rights. A Participant shall have no voting rights with respect to any Restricted Stock Units.

(3) Dividend Equivalents. The Award agreement for Restricted Stock Units may provide Participants with the right to receive an amount equal to any dividends or other distributions declared and paid on an equal number of outstanding shares of Common Stock ("**Dividend Equivalents**"). Dividend Equivalents may be paid currently or credited to an account for the Participants, may be settled in cash and/or shares of Common Stock and may be subject to the same restrictions on transfer and forfeitability as the Restricted Stock Units with respect to which paid, in each case to the extent provided in the applicable Award agreement.

8. Other Stock-Based Awards

(a) General. The Board may grant other Awards of shares of Common Stock, and other Awards that are valued in whole or in part by reference to, or are otherwise based on, shares of Common Stock or other property ("**Other Stock-Based Awards**"). Such Other Stock-Based Awards shall also be available as a form of payment in the settlement of other Awards granted under the Plan or as payment in lieu of compensation to which a Participant is otherwise entitled. Other Stock-Based Awards may be paid in shares of Common Stock or cash, as the Board shall determine.

(b) Terms and Conditions. Subject to the provisions of the Plan, the Board shall determine the terms and conditions of each Other Stock-Based Award, including any purchase price applicable thereto.

9. Adjustments for Changes in Common Stock and Certain Other Events

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under the Plan, (ii) the number and class of securities and exercise price per share of each outstanding Option, (iii) the share and per-share provisions and the measurement price of each outstanding SAR, (iv) the number of shares subject to and the repurchase price per share subject to each outstanding Award of Restricted Stock and (v) the share and per-share-related provisions and the purchase price, if any, of each outstanding Award of Restricted Stock Unit and each outstanding Other Stock-Based Award, shall be equitably adjusted by the Company (or substituted Awards may be made, if applicable) in the manner determined by the Board. Without limiting the generality of the foregoing, in the event the Company effects a split of the Common Stock by means of a stock dividend and the exercise price of and the number of shares subject to an outstanding Option are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend), then an optionee who exercises an Option between the record date and the distribution date for such stock dividend shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon such Option exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

(b) Reorganization Events.

(1) Definition. A "**Reorganization Event**" shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (b) any transfer or disposition of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange or other transaction or (c) any liquidation or dissolution of the Company.

(2) Consequences of a Reorganization Event on Awards Other than Restricted Stock.

(i) In connection with a Reorganization Event, the Board may take any one or more of the following actions as to all or any (or any portion of) outstanding Awards other than Restricted Stock on such terms as the Board determines (except to the extent specifically provided otherwise in an applicable Award agreement or another agreement between the Company and the Participant): (i) provide that such Awards shall be assumed, or substantially equivalent Awards shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (ii) upon written notice to a Participant, provide that all of the Participant's unexercised and/or unvested Awards will terminate immediately prior to the consummation of such Reorganization Event unless exercised by the Participant (to the extent then exercisable) within a specified period following the date of such notice, (iii) provide that outstanding Awards shall become exercisable, realizable, or deliverable, or restrictions applicable to an Award shall lapse, in whole or in part prior to or upon such Reorganization Event, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the "**Acquisition Price**"), make or provide for a cash payment to Participants with respect to each Award held by a Participant equal to (A) the number of shares of Common Stock subject to the vested portion of the Award (after giving effect to any acceleration of vesting that occurs upon or immediately prior to such Reorganization Event) multiplied by (B) the excess, if any, of (I) the Acquisition Price over (II) the exercise, measurement or purchase price of such Award and any applicable tax withholdings, in exchange for the termination of such Award, (v) provide that, in connection with a liquidation or dissolution of the Company, Awards shall convert into the right to receive liquidation proceeds (if applicable, net of the exercise, measurement or purchase price thereof and any applicable tax withholdings) and (vi) any combination of the foregoing. In taking any of the actions permitted under this Section 9(b)(2), the Board shall not be obligated by the Plan to treat all Awards, all Awards held by a Participant, or all Awards of the same type, identically.

(ii) Notwithstanding the terms of Section 9(b)(2)(i), in the case of outstanding Restricted Stock Units that are subject to Section 409A of the Code: (i) if the applicable Restricted Stock Unit agreement provides that the Restricted Stock Units shall be settled upon a "change in control event" within the meaning of Treasury Regulation Section 1.409A-3(i)(5)(i), and the Reorganization Event constitutes such a "change in control event", then no assumption or substitution shall be permitted pursuant to Section 9(b)(2)(i) and the Restricted Stock Units shall instead be settled in accordance with the terms of the applicable Restricted Stock Unit agreement; and (ii) the Board may only undertake the actions set forth in clauses (iii), (iv) or (v) of Section 9(b)(2)(i) if the Reorganization Event constitutes a "change in control event" as defined under Treasury Regulation Section 1.409A-3(i)(5)(i) and such action is permitted or required by Section 409A of the Code; if the Reorganization Event is not a "change in control event" as so defined or such action is not permitted or required by Section 409A of the Code, and the acquiring or succeeding corporation does not assume or substitute the Restricted Stock Units pursuant to clause (i) of Section 9(b)(2)(i), then the unvested Restricted Stock Units shall terminate immediately prior to the consummation of the Reorganization Event without any payment in exchange therefor.

(iii) For purposes of Section 9(b)(2)(i), an Award (other than Restricted Stock) shall be considered assumed if, following consummation of the Reorganization Event, such Award confers the right to purchase or receive pursuant to the terms of such Award, for each share of Common Stock subject to the Award immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); *provided, however*, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise or settlement of the Award to consist solely of such number of shares of common stock of the acquiring or succeeding corporation (or an affiliate thereof) that the Board determined to be equivalent in value (as of the date of such determination or another date specified by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

(3) Consequences of a Reorganization Event on Restricted Stock. Upon the occurrence of a Reorganization Event other than a liquidation or dissolution of the Company, the repurchase and other rights of the Company with respect to outstanding Restricted Stock shall inure to the benefit of the Company's successor and shall, unless the Board determines otherwise, apply to the cash, securities or other property which the Common Stock was converted into or exchanged for pursuant to such Reorganization Event in the same manner and to the same extent as they applied to such Restricted Stock; *provided*, *however*, that the Board may provide for termination or deemed satisfaction of such repurchase or other rights under the instrument evidencing any Restricted Stock or any other agreement between a Participant and the Company, either initially or by amendment, or provide for forfeiture of such Restricted Stock if issued at no cost. Upon the occurrence of a Reorganization Event involving the liquidation or dissolution of the Company, except to the extent specifically provided to the contrary in the instrument evidencing any Restricted Stock or any other agreement between a Participant and the Company, all restrictions and conditions on all Restricted Stock then outstanding shall automatically be deemed terminated or satisfied.

(c) Change in Control Events.

(1) Definitions.

(i) A "**Change in Control Event**" shall mean:

1. The acquisition by an individual, entity or group (within the meaning of Section 13(d)(3) or 14(d)(2) of the Exchange Act)) (a "**Person**") of beneficial ownership of any capital stock of the Company if, after such acquisition, such Person beneficially owns (within the meaning of Rule 13d-3 promulgated under the Exchange Act) 50% or more of the combined voting power of the then-outstanding securities of the Company entitled to vote generally in the election of directors (the "**Outstanding Company Voting Securities**"); provided, however, that for purposes of this subsection (1), the following acquisitions shall not constitute a Change in Control Event: (X) any acquisition directly from the Company or (Y) any acquisition by any corporation pursuant to a Business Combination (as defined below) which complies with clauses (X) and (Y) of subsection (3) of this definition; or

2. such time as the Continuing Directors (as defined below) do not constitute a majority of the Board (or, if applicable, the Board of Directors of a successor corporation to the Company), where the term "**Continuing Director**" means at any date a member of the Board (X) who was a member of the Board on the date of the initial adoption of this Plan by the Board or (Y) who was nominated or elected subsequent to such date by at least a majority of the directors who were Continuing Directors at the time of such nomination or election or whose election to the Board was recommended or endorsed by at least a majority of the directors who were Continuing Directors at the time of such nomination or election; or

3. the consummation of a merger, consolidation, reorganization, recapitalization or share exchange involving the Company or a sale or other disposition of all or substantially all of the assets of the Company (a "**Business Combination**"), unless, immediately following such Business Combination, each of the following two conditions is satisfied: (X) all or substantially all of the individuals and entities who were the beneficial owners of the Outstanding Company Voting Securities immediately prior to such Business Combination beneficially own, directly or indirectly, more than 50% of the combined voting power of the then-outstanding securities entitled to vote generally in the election of directors of the resulting or acquiring corporation in such Business Combination (which shall include, without limitation, a corporation which as a result of such transaction owns the Company or substantially all of the Company's assets either directly or through one or more subsidiaries) (such resulting or acquiring corporation is referred to herein as the "Acquiring Corporation") in substantially the same proportions as their ownership of the Outstanding Company Voting Securities immediately prior to such Business Combination and (Y) no Person beneficially owns, directly or indirectly, 50% or more of the combined voting power of the then-outstanding securities of such corporation entitled to vote generally in the election of directors (except to the extent that such ownership existed prior to the Business Combination); or

4. the liquidation or dissolution of the Company.

(ii) "**Good Reason**" shall mean the occurrence of any of the following without the Participant's prior written consent: (A) material diminution in the duties, authority or responsibilities of the Participant from and after such Change in Control Event as compared to those in effect immediately preceding the Change in Control Event; provided, however, that a change in the Participant's title or reporting relationship solely due to the Company becoming a division, subsidiary or other similar part of a larger organization following a Change in Control Event shall not by itself constitute Good Reason; (B) any material reduction in the Participant's annual base compensation from and after such Change in Control Event; (C) the material relocation of the Participant's place of employment as compared to his or her place of employment immediately preceding the Change in Control Event; or (D) the material breach of the Company or its successor of any Award granted under this plan.

(iii) "**Cause**" shall mean the occurrence of any of the following: (A) the Participant's willful failure to perform in any material respect Participant's material duties or responsibilities for the Company, which is not cured within 30 days of written notice thereof to the Participant from the Company; (B) repeated unexplained or unjustified absence from the Company inconsistent with the Participant's duties and responsibilities for the Company, which continues without explanation or justification after written notice thereof to the Participant from the Company; (C) Participant's willful misconduct that causes material and demonstrable monetary or reputational injury to the Company, including, but not limited to, misappropriation or conversion of assets of the Company (other than non-material assets); or (D) the conviction of the Participant of, or the entry of a plea of guilty or *nolo contendere* by the Participant to, any crime involving moral turpitude or any felony.

(2) Effect on Options. Notwithstanding the provisions of Section 9(b), except to the extent specifically provided to the contrary in the instrument evidencing any Option or any other agreement between a Participant and the Company, each Option shall be immediately exercisable in full if, on or prior to the first anniversary of the date of the consummation of the Change in Control Event, the Participant's employment with the Company or the acquiring or succeeding corporation is terminated for Good Reason by the Participant or is terminated without Cause by the Company or the acquiring or succeeding corporation.

(3) Effect on Restricted Stock Awards. Notwithstanding the provisions of Section 9(b), except to the extent specifically provided to the contrary in the instrument evidencing any Restricted Stock Award or any other agreement between a Participant and the Company, each Restricted Stock Award shall immediately become free from all conditions or restrictions if, on or prior to the first anniversary of the date of the consummation of the Change in Control Event, the Participant's employment with the Company or the acquiring or succeeding corporation is terminated for Good Reason by the Participant or is terminated without Cause by the Company or the acquiring or succeeding corporation.

(4) Effect on SARs and Other Stock-Based Awards. The Board may specify in an Award at the time of the grant the effect of a Change in Control Event on any SAR or Other Stock-Based Award.

10. General Provisions Applicable to Awards.

(a) Transferability of Awards. Awards (or any interest in an Award, including, prior to exercise, any interest in shares of Common Stock issuable upon exercise of an Option or SAR) shall not be sold, assigned, transferred (including by establishing any short position, put equivalent position (as defined in Rule 16a-1 issued under the Exchange Act) or call equivalent position (as defined in Rule 16a-1 issued under the Exchange Act)), pledged, hypothecated or otherwise encumbered by the person to whom they are granted, either voluntarily or by operation of law, and, during the life of the Participant, shall be exercisable only by the Participant; except that Awards, other than Awards subject to Section 409A of the Code, may be transferred to family members (as defined in Rule 701(c)(3) under the Securities Act) through gifts or (other than Incentive Stock Options) domestic relations orders or to an executor or guardian upon the death or disability of the Participant. The Company shall not be required to recognize any such permitted transfer until such time as such permitted transferee shall deliver to the Company a written instrument, as a condition to such transfer, in form and substance satisfactory to the Company confirming that such transferee shall be bound by all of the terms and conditions of the Award. References to a Participant, to the extent relevant in the context, shall include references to authorized transferees. For the avoidance of doubt, nothing contained in this Section 10(a) shall be deemed to restrict a transfer to the Company.

(b) Documentation. Each Award shall be evidenced in such form (written, electronic or otherwise) as the Board shall determine. Each Award may contain terms and conditions in addition to those set forth in the Plan.

(c) Board Discretion. Except as otherwise provided by the Plan, each Award may be made alone or in addition or in relation to any other Award. The terms of each Award need not be identical, and the Board need not treat Participants uniformly.

(d) Termination of Status. The Board shall determine the effect on an Award of the disability, death, termination or other cessation of employment, authorized leave of absence or other change in the employment or other status of a Participant and the extent to which, and the period during which, the Participant, or the Participant’s legal representative, conservator, guardian or Designated Beneficiary, may exercise rights under the Award.

(e) Withholding. The Participant must satisfy all applicable federal, state, and local or other income and employment tax withholding obligations before the Company will deliver stock certificates or otherwise recognize ownership of Common Stock under an Award. The Company may elect to satisfy the withholding obligations through additional withholding on salary or wages. If the Company elects not to or cannot withhold from other compensation, the Participant must pay the Company the full amount, if any, required for withholding or have a broker tender to the Company cash equal to the withholding obligations. Payment of withholding obligations is due before the Company will issue any shares on exercise, vesting or release from forfeiture of an Award or at the same time as payment of the exercise or purchase price unless the Company determines otherwise. If provided for in an Award or approved by the Board in its discretion, a Participant may satisfy such tax obligations in whole or in part by delivery (either by actual delivery or attestation) of shares of Common Stock, including shares retained from the Award creating the tax obligation, valued at their fair market value (valued in the manner determined by (or in a manner approved by) the Company); *provided, however*, except as otherwise provided by the Board, that the total tax withholding where stock is being used to satisfy such tax obligations cannot exceed the Company's minimum statutory withholding obligations (based on minimum statutory withholding rates for federal and state tax purposes, including payroll taxes, that are applicable to such supplemental taxable income), *except that*, to the extent that the Company is able to retain shares of Common Stock having a fair market value (valued in the manner determined by (or in a manner approved by) the Company) that exceeds the statutory minimum applicable withholding tax without financial accounting implications or the Company is withholding in a jurisdiction that does not have a statutory minimum withholding tax, the Company may retain such number of shares of Common Stock (up to the number of shares having a fair market value (valued in the manner determined by (or in a manner approved by) the Company) equal to the maximum individual statutory rate of tax) as the Company shall determine in its discretion to satisfy the tax liability associated with any Award. Shares used to satisfy tax withholding requirements cannot be subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements.

(f) Amendment of Award.

(1) The Board may amend, modify or terminate any outstanding Award, including but not limited to, substituting therefor another Award of the same or a different type, changing the date of exercise or realization, and converting an Incentive Stock Option to a Nonstatutory Stock Option. The Participant's consent to such action shall be required unless (i) the Board determines that the action, taking into account any related action, does not materially and adversely affect the Participant's rights under the Plan or (ii) the change is permitted under Section 9.

(2) The Board may, without stockholder approval, amend any outstanding Award granted under the Plan to provide an exercise price per share that is lower than the then-current exercise price per share of such outstanding Award. The Board may also, without stockholder approval, cancel any outstanding award (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan covering the same or a different number of shares of Common Stock and having an exercise price per share lower than the then-current exercise price per share of the cancelled award.

(g) Conditions on Delivery of Stock. The Company will not be obligated to deliver any shares of Common Stock pursuant to the Plan or to remove restrictions from shares previously issued or delivered under the Plan until (i) all conditions of the Award have been met or removed to the satisfaction of the Company, (ii) in the opinion of the Company's counsel, all other legal matters in connection with the issuance and delivery of such shares have been satisfied, including any applicable securities laws and regulations and any applicable stock exchange or stock market rules and regulations, and (iii) the Participant has executed and delivered to the Company such representations or agreements as the Company may consider appropriate to satisfy the requirements of any applicable laws, rules or regulations.

(h) Acceleration. The Board may at any time provide that any Award shall become immediately exercisable in whole or in part, free of some or all restrictions or conditions, or otherwise realizable in whole or in part, as the case may be.

11. Miscellaneous.

(a) No Right To Employment or Other Status. No person shall have any claim or right to be granted an Award by virtue of the adoption of the Plan, and the grant of an Award shall not be construed as giving a Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under the Plan, except as expressly provided in the applicable Award.

(b) No Rights As Stockholder. Subject to the provisions of the applicable Award, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be distributed with respect to an Award until becoming the record holder of such shares.

(c) Effective Date and Term of Plan. The Plan shall become effective on the date on which it is adopted by the Board. No Awards shall be granted under the Plan after the expiration of 10 years from the earlier of (i) the date on which the Plan was adopted by the Board or (ii) the date the Plan was approved by the Company's stockholders, but Awards previously granted may extend beyond that date.

(d) Amendment of Plan. The Board may amend, suspend or terminate the Plan or any portion thereof at any time; *provided* that if at any time the approval of the Company's stockholders is required as to any modification or amendment under Section 422 of the Code or any successor provision with respect to Incentive Stock Options, the Board may not effect such modification or amendment without such approval. Unless otherwise specified in the amendment, any amendment to the Plan adopted in accordance with this Section 11(d) shall apply to, and be binding on the holders of, all Awards outstanding under the Plan at the time the amendment is adopted, provided the Board determines that such amendment, taking into account any related action, does not materially and adversely affect the rights of Participants under the Plan.

(e) Authorization of Sub-Plans (including Grants to non-U.S. Employees). The Board may from time to time establish one or more sub-plans under the Plan for purposes of satisfying applicable securities, tax or other laws of various jurisdictions. The Board shall establish such sub-plans by adopting supplements to the Plan containing (i) such limitations on the Board's discretion under the Plan as the Board deems necessary or desirable or (ii) such additional terms and conditions not otherwise inconsistent with the Plan as the Board shall deem necessary or desirable. All supplements adopted by the Board shall be deemed to be part of the Plan, but each supplement shall apply only to Participants within the affected jurisdiction and the Company shall not be required to provide copies of any supplement to Participants in any jurisdiction which is not the subject of such supplement.

(f) Compliance with Section 409A of the Code. If and to the extent (i) any portion of any payment, compensation or other benefit provided to a Participant pursuant to the Plan in connection with Participant's employment termination constitutes "nonqualified deferred compensation" within the meaning of Section 409A of the Code and (ii) the Participant is a specified employee as defined in Section 409A(a)(2)(B)(i) of the Code, in each case as determined by the Company in accordance with its procedures, by which determinations the Participant (through accepting the Award) agrees that the Participant is bound, such portion of the payment, compensation or other benefit shall not be paid before the day that is six months plus one day after the date of "separation from service" (as determined under Section 409A of the Code) (the "**New Payment Date**"), except as Section 409A of the Code may then permit. The aggregate of any payments that otherwise would have been paid to the Participant during the period between the date of separation from service and the New Payment Date shall be paid to the Participant in a lump sum on such New Payment Date, and any remaining payments will be paid on their original schedule.

The Company makes no representations or warranty and shall have no liability to the Participant or any other person if any provisions of or payments, compensation or other benefits under the Plan are determined to constitute nonqualified deferred compensation subject to Section 409A of the Code but do not to satisfy the conditions of that section.

(g) Limitations on Liability. Notwithstanding any other provisions of the Plan, no individual acting as a director, officer, other employee, or agent of the Company will be liable to any Participant, former Participant, spouse, beneficiary, or any other person for any claim, loss, liability, or expense incurred in connection with the Plan, nor will such individual be personally liable with respect to the Plan because of any contract or other instrument such individual executes in such individual's capacity as a director, officer, other employee, or agent of the Company. The Company will indemnify and hold harmless each director, officer, other employee, or agent of the Company to whom any duty or power relating to the administration or interpretation of the Plan has been or will be delegated, against any cost or expense (including attorneys' fees) or liability (including any sum paid in settlement of a claim with the Board's approval) arising out of any act or omission to act concerning the Plan unless arising out of such person's own fraud or bad faith.

(h) Governing Law. The provisions of the Plan and all Awards made hereunder shall be governed by and interpreted in accordance with the laws of the State of Delaware, excluding choice-of-law principles of the law of such state that would require the application of the laws of a jurisdiction other than the State of Delaware.

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CARMA THERAPEUTICS INC.
2017 STOCK INCENTIVE PLAN

CALIFORNIA SUPPLEMENT

Pursuant to Section 11(e) of the Plan, the Board has adopted this supplement for purposes of satisfying the requirements of Section 25102(o) of the California Law:

Any Awards granted under the Plan to a Participant who is a resident of the State of California on the date of grant (a "**California Participant**") shall be subject to the following additional limitations, terms and conditions:

1. Additional Limitations on Options.

(a) Maximum Duration of Options. No Options granted to California Participants shall have a term in excess of 10 years measured from the Option grant date.

(b) Minimum Exercise Period Following Termination. Unless a California Participant's employment is terminated for cause (as defined by applicable law, the terms of the Plan or option grant or a contract of employment), in the event of termination of employment of such Participant, such Participant shall have the right to exercise an Option, to the extent that such Participant is entitled to exercise such Option on the date employment terminated, until the earlier of: (i) at least six months from the date of termination, if termination was caused by such Participant's death or disability, (ii) at least 30 days from the date of termination, if termination was caused other than by such Participant's death or disability and (iii) the Option expiration date.

2. Additional Limitations for Other Stock-Based Awards. The terms of all Awards granted to a California Participant under Section 8 of the Plan shall comply, to the extent applicable, with Section 260.140.46 of the California Code of Regulations.

3. Additional Limitations on Timing of Awards. No Award granted to a California Participant shall become exercisable, vested or realizable, as applicable to such Award, unless the Plan has been approved by the holders of a majority of the Company's outstanding voting securities by the later of (i) within 12 months before or after the date the Plan was adopted by the Board, or (ii) prior to or within 12 months of the granting of any Award to a California Participant.

4. Additional Restriction Regarding Recapitalizations, Stock Splits, Etc. For purposes of Section 9 of the Plan, in the event of a stock split, reverse stock split, stock dividend, recapitalization, combination, reclassification or other distribution of the Company's securities underlying the Award without the receipt of consideration by the Company, the number of securities purchasable, and in the case of Options, the exercise price of such Options, shall be proportionately adjusted.

5. Additional Limitations on Transferability of Awards. Notwithstanding the provisions of Section 10(a) of the Plan, an Award granted to a California Participant may not be transferred to an executor or guardian upon the disability of the Participant.

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CARMA THERAPEUTICS INC.

AMENDMENT TO 2017 STOCK INCENTIVE PLAN

Approved by the Board of Directors of CARMA Therapeutics Inc. on June 22, 2018
Approved by the Stockholders of CARMA Therapeutics Inc. on June 22, 2018

The first sentence of Section 4(a) of the 2017 Stock Incentive Plan of CARMA Therapeutics Inc. (the "**Plan**") is hereby deleted in its entirety and the following sentence is inserted in lieu thereof:

> "Subject to adjustment under Section 9, Awards may be made under the Plan for up to 1,154,413 shares of common stock, $0.0001 par value per share, of the Company (the "**Common Stock**"), any or all of which Awards may be in the form of Incentive Stock Options (as defined in Section 5(b))."

Except as expressly amended herein, the Plan and all of the provisions contained therein shall remain in full force and effect.

CARISMA THERAPEUTICS INC.

AMENDMENT NO. 2 TO 2017 STOCK INCENTIVE PLAN

Approved by the Board of Directors of CARISMA Therapeutics Inc. on December 21, 2020
Approved by the Stockholders of CARISMA Therapeutics Inc. on December 21, 2020

The first sentence of Section 4(a) of the 2017 Stock Incentive Plan of CARISMA Therapeutics Inc. (the "**Plan**") is hereby deleted in its entirety and the following sentence is inserted in lieu thereof:

> "Subject to adjustment under Section 9, Awards may be made under the Plan for up to 1,784,018 shares of common stock, $0.0001 par value per share, of the Company (the "**Common Stock**"), any or all of which Awards may be in the form of Incentive Stock Options (as defined in Section 5(b))."

Except as expressly amended herein, the Plan and all of the provisions contained therein shall remain in full force and effect.

CARISMA THERAPEUTICS INC.

AMENDMENT NO. 3 TO 2017 STOCK INCENTIVE PLAN

Approved by the Board of Directors of CARISMA Therapeutics Inc. on November 9, 2021
Approved by the Stockholders of CARISMA Therapeutics Inc. on November 9, 2021

The first sentence of Section 4(a) of the 2017 Stock Incentive Plan, as amended, of CARISMA Therapeutics Inc. (the "**Plan**") is hereby deleted in its entirety and the following sentence is inserted in lieu thereof:

> "Subject to adjustment under Section 9, Awards may be made under the Plan for up to 1,984,018 shares of common stock, $0.0001 par value per share, of the Company (the "**Common Stock**"), any or all of which Awards may be in the form of Incentive Stock Options (as defined in Section 5(b))."

Except as expressly amended herein, the Plan and all of the provisions contained therein shall remain in full force and effect.

CARISMA THERAPEUTICS INC.

AMENDMENT NO. 4 TO 2017 STOCK INCENTIVE PLAN

Approved by the Board of Directors of CARISMA Therapeutics Inc. on March 22, 2022
Approved by the Stockholders of CARISMA Therapeutics Inc. on April 7, 2022

The first sentence of Section 4(a) of the 2017 Stock Incentive Plan, as amended, of CARISMA Therapeutics Inc. (the "**Plan**") is hereby deleted in its entirety and the following sentence is inserted in lieu thereof:

> "Subject to adjustment under Section 9, Awards may be made under the Plan for up to 2,664,018 shares of common stock, $0.0001 par value per share, of the Company (the "**Common Stock**"), any or all of which Awards may be in the form of Incentive Stock Options (as defined in Section 5(b))."

Except as expressly amended herein, the Plan and all of the provisions contained therein shall remain in full force and effect.

Exhibit 10.11

CARISMA Therapeutics Inc.

Nonstatutory Stock Option Agreement
Granted Under 2017 Stock Incentive Plan

1. Grant of Option.

This Nonstatutory Stock Option Agreement (the "**Agreement**") evidences the grant by CARISMA Therapeutics Inc., a Delaware corporation (the "**Company**"), on [_____ __, 20__] (the "**Grant Date**") to [_____], an employee, consultant or director of the Company (the "**Participant**"), of an option to purchase, in whole or in part, on the terms provided herein and in the Company's 2017 Stock Incentive Plan (the "**Plan**"), as amended, a total of [_____] shares (the "**Shares**") of common stock, $0.0001 par value per share, of the Company ("**Common Stock**") at $[_____] per Share. Unless earlier terminated, this option shall expire at 5:00 p.m., Eastern time, on [_____ __, 20__] [date is ten years minus one day from grant date] (the "**Final Exercise Date**").

It is intended that the option evidenced by this Agreement shall not be an incentive stock option as defined in Section 422 of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "**Code**"). Except as otherwise indicated by the context, the term "**Participant**", as used in this option, shall be deemed to include any person who acquires the right to exercise this option validly under its terms.

2. Vesting Schedule.

[This option will become exercisable ("**vest**") as to 25% of the original number of Shares on the first anniversary of the Vesting Commencement Date (as defined below) and as to an additional 2.0833% of the original number of Shares at the end of each successive month following the first anniversary of the Vesting Commencement Date until the fourth anniversary of the Vesting Commencement Date. On the fourth anniversary of the Vesting Commencement Date, this option will be exercisable as to all Shares. For purposes of this Agreement, "**Vesting Commencement Date**" shall mean [_____].]

The right of exercise shall be cumulative so that to the extent the option is not exercised in any period to the maximum extent permissible it shall continue to be exercisable, in whole or in part, with respect to all Shares for which it is vested until the earlier of the Final Exercise Date or the termination of this option under Section 3 hereof or the Plan.

3. Exercise of Option.

(a) Form of Exercise. Each election to exercise this option shall be accompanied by a completed Notice of Stock Option Exercise in the form attached hereto as Exhibit A, signed by the Participant, and received by the Company at its principal office, accompanied by this Agreement, and payment in full in the manner provided in the Plan. The Participant may purchase less than the number of Shares covered hereby, provided that no partial exercise of this option may be for any fractional share or for fewer than ten whole shares.

(b) Continuous Relationship with the Company Required. Except as otherwise provided in this Section 3, this option may not be exercised unless the Participant, at the time he or she exercises this option, is, and has been at all times since the Grant Date, an employee, officer or director of, or consultant or advisor to, the Company or any other entity the employees, officers, directors, consultants, or advisors of which are eligible to receive option grants under the Plan (an "**Eligible Participant**").

(c) Termination of Relationship with the Company. If the Participant ceases to be an Eligible Participant for any reason, then, except as provided in paragraphs (d) and (e) below, the right to exercise this option shall terminate three months after such cessation (but in no event after the Final Exercise Date), provided that this option shall be exercisable only to the extent that the Participant was entitled to exercise this option on the date of such cessation. Notwithstanding the foregoing, if the Participant, prior to the Final Exercise Date, violates the non-competition or confidentiality provisions of any employment contract, confidentiality and nondisclosure agreement or other agreement between the Participant and the Company, the right to exercise this option shall terminate immediately upon such violation.

(d) Exercise Period Upon Death or Disability. If the Participant dies or becomes disabled (within the meaning of Section 22(e)(3) of the Code) prior to the Final Exercise Date while he or she is an Eligible Participant and the Company has not terminated such relationship for "cause" as specified in paragraph (e) below, this option shall be exercisable, within the period of one year following the date of death or disability of the Participant, by the Participant (or in the case of death by an authorized transferee), provided that this option shall be exercisable only to the extent that this option was exercisable by the Participant on the date of his or her death or disability, and further provided that this option shall not be exercisable after the Final Exercise Date.

(e) Termination for Cause. If, prior to the Final Exercise Date, the Participant's employment or other relationship with the Company is terminated by the Company for Cause (as defined below), the right to exercise this option shall terminate immediately upon the effective date of such termination of employment or other relationship. If, prior to the Final Exercise Date, the Participant is given notice by the Company of the termination of his or her employment or other relationship by the Company for Cause, and the effective date of such employment or other termination is subsequent to the date of the delivery of such notice, the right to exercise this option shall be suspended from the time of the delivery of such notice until the earlier of (i) such time as it is determined or otherwise agreed that the Participant's employment or other relationship shall not be terminated for Cause as provided in such notice or (ii) the effective date of such termination of employment or other relationship (in which case the right to exercise this option shall, pursuant to the preceding sentence, terminate immediately upon the effective date of such termination of employment or other relationship). If the Participant is party to an employment, consulting or severance agreement with the Company that contains a definition of "cause" for termination of employment or other relationship, "Cause" shall have the meaning ascribed to such term in such agreement. Otherwise, "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform his or her responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant's employment or other relationship shall be considered to have been terminated for "Cause" if the Company determines, within 30 days after the Participant's resignation, that termination for Cause was warranted.

4. Company Right of First Refusal.

(a) Notice of Proposed Transfer. If the Participant proposes to sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively, "transfer") any Shares acquired upon exercise of this option, then the Participant shall first give written notice of the proposed transfer (the "**Transfer Notice**") to the Company. The Transfer Notice shall name the proposed transferee and state the number of such Shares the Participant proposes to transfer (the "**Offered Shares**"), the price per share and all other material terms and conditions of the transfer.

(b) Company Right to Purchase. For 30 days following its receipt of such Transfer Notice, the Company shall have the option to purchase all or part of the Offered Shares at the price and upon the terms set forth in the Transfer Notice. In the event the Company elects to purchase all or part of the Offered Shares, it shall give written notice of such election to the Participant within such 30-day period. Within 10 days after his or her receipt of such notice, the Participant shall tender to the Company at its principal offices the certificate or certificates representing the Offered Shares to be purchased by the Company, duly endorsed in blank by the Participant or with duly endorsed stock powers attached thereto, all in a form suitable for transfer of the Offered Shares to the Company. Promptly following receipt of such certificate or certificates, the Company shall deliver or mail to the Participant a check in payment of the purchase price for such Offered Shares; provided that if the terms of payment set forth in the Transfer Notice were other than cash against delivery, the Company may pay for the Offered Shares on the same terms and conditions as were set forth in the Transfer Notice; and provided further that any delay in making such payment shall not invalidate the Company's exercise of its option to purchase the Offered Shares.

(c) Shares Not Purchased By Company. If the Company does not elect to acquire all of the Offered Shares, the Participant may, within the 30-day period following the expiration of the option granted to the Company under subsection (b) above, transfer the Offered Shares which the Company has not elected to acquire to the proposed transferee, provided that such transfer shall not be on terms and conditions more favorable to the transferee than those contained in the Transfer Notice. Notwithstanding any of the above, all Offered Shares transferred pursuant to this Section 4 shall remain subject to the right of first refusal set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(d) Consequences of Non-Delivery. After the time at which the Offered Shares are required to be delivered to the Company for transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Offered Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Offered Shares, but shall, insofar as permitted by law, treat the Company as the owner of such Offered Shares.

(e) Exempt Transactions. The following transactions shall be exempt from the provisions of this Section 4:

(1) any transfer of Shares to or for the benefit of any spouse, child or grandchild of the Participant, or to a trust for their benefit;

(2) any transfer pursuant to an effective registration statement filed by the Company under the Securities Act of 1933, as amended (the "**Securities Act**"); and

(3) the sale of all or substantially all of the outstanding shares of capital stock of the Company (including pursuant to a merger or consolidation);

provided, however, that in the case of a transfer pursuant to clause (1) above, such Shares shall remain subject to the right of first refusal set forth in this Section 4.

(f) Assignment of Company Right. The Company may assign its rights to purchase Offered Shares in any particular transaction under this Section 4 to one or more persons or entities.

(g) Termination. The provisions of this Section 4 shall terminate upon the earlier of the following events:

(1) the closing of the sale of shares of Common Stock in an underwritten public offering pursuant to an effective registration statement filed by the Company under the Securities Act; or

(2) the sale of all or substantially all of the outstanding shares of capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise (other than a merger or consolidation in which all or substantially all of the individuals and entities who were beneficial owners of the Company's voting securities immediately prior to such transaction beneficially own, directly or indirectly, more than 75% (determined on an as-converted basis) of the outstanding securities entitled to vote generally in the election of directors of the resulting, surviving or acquiring corporation in such transaction).

(h) No Obligation to Recognize Invalid Transfer. The Company shall not be required (1) to transfer on its books any of the Shares which shall have been sold or transferred in violation of any of the provisions set forth in this Section 4, or (2) to treat as owner of such Shares or to pay dividends to any transferee to whom any such Shares shall have been so sold or transferred.

(i) Legends. The certificate representing Shares shall bear a legend substantially in the following form (in addition to, or in combination with, any legend required by applicable federal and state securities laws and agreements relating to the transfer of the Company securities):

> "The shares represented by this certificate are subject to a right of first refusal in favor of the Company, as provided in a certain stock option agreement with the Company."

5. Agreement in Connection with Initial Public Offering.

The Participant agrees, in connection with the initial underwritten public offering of the Common Stock pursuant to a registration statement under the Securities Act, (i) not to (a) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any other securities of the Company or (b) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of shares of Common Stock or other securities of the Company, whether any transaction described in clause (a) or (b) is to be settled by delivery of securities, in cash or otherwise, during the period beginning on the date of the filing of such registration statement with the Securities and Exchange Commission and ending 180 days after the date of the final prospectus relating to the offering (plus up to an additional 34 days to the extent requested by the managing underwriters for such offering in order to address NASD Rule 2711(f)(4) or NYSE Rule 472(f)(4) or any similar successor provision), and (ii) to execute any agreement reflecting clause (i) above as may be requested by the Company or the managing underwriters at the time of such offering. The Company may impose stop-transfer instructions with respect to the shares of Common Stock or other securities subject to the foregoing restriction until the end of the "lock-up" period.

6. Withholding.

No Shares will be issued pursuant to the exercise of this option unless and until the Participant pays to the Company, or makes provision satisfactory to the Company for payment of, any federal, state or local withholding taxes required by law to be withheld in respect of this option.

7. Transfer Restrictions.

(a) This option may not be sold, assigned, transferred, pledged or otherwise encumbered by the Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution, and, during the lifetime of the Participant, this option shall be exercisable only by the Participant.

(b) The Participant agrees that he or she will not transfer any Shares issued pursuant to the exercise of this option unless the transferee, as a condition to such transfer, delivers to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of Section 4 and Section 5; provided that such a written confirmation shall not be required with respect to (1) Section 4 after such provision has terminated in accordance with Section 4(g) or (2) Section 5 after the completion of the lock-up period in connection with the Company's initial underwritten public offering.

8. Provisions of the Plan.

This option is subject to the provisions of the Plan (including the provisions relating to amendments to the Plan), a copy of which is furnished to the Participant with this option.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written. The Participant hereby accepts the foregoing option and agrees to the terms and conditions thereof. The Participant hereby acknowledges receipt of a copy of the Company's 2017 Stock Incentive Plan.

COMPANY:

CARISMA THERAPEUTICS INC.

By: _____
Name: _____
Title: _____

PARTICIPANT:

By: _____
[Name]

Address: [_____]
[_____]

SPOUSAL CONSENT: [1]

By: _____
Name: _____

Address: [_____]
[_____]

[1] If the Participant resides in a community property state, it is desirable to have the Participant's spouse also accept the option. The following are community property states: Arizona, California, Idaho, Louisiana, Nevada, New Mexico, Texas, and Washington. Although Wisconsin is not formally a community property state, it has laws governing the division of marital property similar to community property states and it may be desirable to have a Wisconsin Participant's spouse accept the option.

EXHIBIT A

NOTICE OF STOCK OPTION EXERCISE

[DATE][1]

CARISMA Therapeutics Inc.
3025 Market Street, Ste 140
Philadelphia, PA 19104

Attention: Treasurer

Dear Sir or Madam:

I am the holder of a Nonstatutory Stock Option granted to me under the CARISMA Therapeutics Inc. (the "**Company**") 2017 Stock Incentive Plan on [_____][2] for the purchase of [_____][3] shares of Common Stock of the Company at a purchase price of $[_____][4] per share.

I hereby exercise my option to purchase [_____][5] shares of Common Stock (the "**Shares**"), for which I have enclosed [_____][6] in the amount of [_____][7]. Please register my stock certificate as follows:

Name(s): _____[8]

_____

Address: _____

_____

---

[1] Enter date of exercise.

[2] Enter the date of grant.

[3] Enter the total number of shares of Common Stock for which the option was granted.

[4] Enter the option exercise price per share of Common Stock.

[5] Enter the number of shares of Common Stock to be purchased upon exercise of all or part of the option.

[6] Enter "cash", "personal check" or if permitted by the option or Plan, "stock certificates No. XXXX and XXXX".

[7] Enter the dollar amount (price per share of Common Stock times the number of shares of Common Stock to be purchased), or the number of shares tendered. Fair market value of shares tendered, together with cash or check, must cover the purchase price of the shares issued upon exercise.

[8] Enter name(s) to appear on stock certificate in one of the following formats: (a) your name only (i.e., John Doe); (b) your name and other name (i.e., John Doe and Jane Doe, Joint Tenants with Right to Survivorship); or for Nonstatutory Stock Options only, (c) a child's name, with you as custodian (i.e. Jane Doe, Custodian for Tommy Doe). Note: There may be income and/or gift tax consequences for registering shares in a child's name.

I represent, warrant and covenant as follows:

1. I am purchasing the Shares for my own account for investment only, and not with a view to, or for sale in connection with, any distribution of the Shares in violation of the Securities Act of 1933 (the "**Securities Act**"), or any rule or regulation under the Securities Act.

2. I have had such opportunity as I have deemed adequate to obtain from representatives of the Company such information as is necessary to permit me to evaluate the merits and risks of my investment in the Company.

3. I have sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

4. I can afford a complete loss of the value of the Shares and am able to bear the economic risk of holding such Shares for an indefinite period.

5. I understand that (i) the Shares have not been registered under the Securities Act and are "restricted securities" within the meaning of Rule 144 under the Securities Act, (ii) the Shares cannot be sold, transferred or otherwise disposed of unless they are subsequently registered under the Securities Act or an exemption from registration is then available; (iii) in any event, the exemption from registration under Rule 144 will not be available for at least one year and even then will not be available unless a public market then exists for the Common Stock, adequate information concerning the Company is then available to the public, and other terms and conditions of Rule 144 are complied with; and (iv) there is now no registration statement on file with the Securities and Exchange Commission with respect to any stock of the Company and the Company has no obligation or current intention to register the Shares under the Securities Act.

Very truly yours,

_____

[Name]

Exhibit 10.12

CARISMA THERAPEUTICS INC.

INCENTIVE STOCK OPTION AGREEMENT
GRANTED UNDER 2017 STOCK INCENTIVE PLAN

1. Grant of Option.

This Incentive Stock Option Agreement (the "**Agreement**") evidences the grant by CARISMA Therapeutics Inc., a Delaware corporation (the "**Company**"), on [_____ __, 20__] (the "**Grant Date**") to [_____], an employee of the Company (the "**Participant**"), of an option to purchase, in whole or in part, on the terms provided herein and in the Company's 2017 Stock Incentive Plan (the "**Plan**"), as amended, a total of [_____] shares (the "**Shares**") of common stock, $0.0001 par value per share, of the Company ("**Common Stock**") at $[_____] per Share. Unless earlier terminated, this option shall expire at 5:00 p.m., Eastern time, on [_____ __, 20__] [date is ten years minus one day from grant date] (the "**Final Exercise Da**te").

It is intended that the option evidenced by this Agreement shall be an incentive stock option as defined in Section 422 of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "**Code**"). Except as otherwise indicated by the context, the term "**Participant**", as used in this option, shall be deemed to include any person who acquires the right to exercise this option validly under its terms.

2. Vesting Schedule.

[This option will become exercisable ("**vest**") as to 25% of the original number of Shares on the first anniversary of the Vesting Commencement Date (as defined below) and as to an additional 2.0833% of the original number of Shares at the end of each successive month following the first anniversary of the Vesting Commencement Date until the fourth anniversary of the Vesting Commencement Date. On the fourth anniversary of the Vesting Commencement Date, this option will be exercisable as to all Shares. For purposes of this Agreement, "**Vesting Commencement Date**" shall mean [_____].]

The right of exercise shall be cumulative so that to the extent the option is not exercised in any period to the maximum extent permissible it shall continue to be exercisable, in whole or in part, with respect to all Shares for which it is vested until the earlier of the Final Exercise Date or the termination of this option under Section 3 hereof or the Plan.

3. Exercise of Option.

(a) Form of Exercise. Each election to exercise this option shall be accompanied by a completed Notice of Stock Option Exercise in the form attached hereto as Exhibit A, signed by the Participant, and received by the Company at its principal office, accompanied by this Agreement, and payment in full in the manner provided in the Plan. The Participant may purchase less than the number of Shares covered hereby, provided that no partial exercise of this option may be for any fractional share or for fewer than ten whole shares.

(b) Continuous Relationship with the Company Required. Except as otherwise provided in this Section 3, this option may not be exercised unless the Participant, at the time he or she exercises this option, is, and has been at all times since the Grant Date, an employee or officer of, or consultant or advisor to, the Company or any parent or subsidiary of the Company as defined in Section 424(e) or (f) of the Code (an "**Eligible Participant**").

(c) Termination of Relationship with the Company. If the Participant ceases to be an Eligible Participant for any reason, then, except as provided in paragraphs (d) and (e) below, the right to exercise this option shall terminate three months after such cessation (but in no event after the Final Exercise Date), provided that this option shall be exercisable only to the extent that the Participant was entitled to exercise this option on the date of such cessation. Notwithstanding the foregoing, if the Participant, prior to the Final Exercise Date, violates the non-competition or confidentiality provisions of any employment contract, confidentiality and nondisclosure agreement or other agreement between the Participant and the Company, the right to exercise this option shall terminate immediately upon such violation.

(d) Exercise Period Upon Death or Disability. If the Participant dies or becomes disabled (within the meaning of Section 22(e)(3) of the Code) prior to the Final Exercise Date while he or she is an Eligible Participant and the Company has not terminated such relationship for "cause" as specified in paragraph (e) below, this option shall be exercisable, within the period of one year following the date of death or disability of the Participant, by the Participant (or in the case of death by an authorized transferee), provided that this option shall be exercisable only to the extent that this option was exercisable by the Participant on the date of his or her death or disability, and further provided that this option shall not be exercisable after the Final Exercise Date.

(e) Termination for Cause. If, prior to the Final Exercise Date, the Participant's employment is terminated by the Company for Cause (as defined below), the right to exercise this option shall terminate immediately upon the effective date of such termination of employment. If, prior to the Final Exercise Date, the Participant is given notice by the Company of the termination of his or her employment by the Company for Cause, and the effective date of such employment termination is subsequent to the date of delivery of such notice, the right to exercise this option shall be suspended from the time of the delivery of such notice until the earlier of (i) such time as it is determined or otherwise agreed that the Participant's employment shall not be terminated for Cause as provided in such notice or (ii) the effective date of such termination of employment (in which case the right to exercise this option shall, pursuant to the preceding sentence, terminate upon the effective date of such termination of employment). If the Participant is party to an employment or severance agreement with the Company that contains a definition of "cause" for termination of employment, "Cause" shall have the meaning ascribed to such term in such agreement. Otherwise, "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform his or her responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant's employment shall be considered to have been terminated for Cause if the Company determines, within 30 days after the Participant's resignation, that termination for Cause was warranted.

4. Company Right of First Refusal.

(a) Notice of Proposed Transfer. If the Participant proposes to sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively, "transfer") any Shares acquired upon exercise of this option, then the Participant shall first give written notice of the proposed transfer (the "**Transfer Notice**") to the Company. The Transfer Notice shall name the proposed transferee and state the number of such Shares the Participant proposes to transfer (the "**Offered Shares**"), the price per share and all other material terms and conditions of the transfer.

(b) Company Right to Purchase. For 30 days following its receipt of such Transfer Notice, the Company shall have the option to purchase all or part of the Offered Shares at the price and upon the terms set forth in the Transfer Notice. In the event the Company elects to purchase all or part of the Offered Shares, it shall give written notice of such election to the Participant within such 30-day period. Within 10 days after his or her receipt of such notice, the Participant shall tender to the Company at its principal offices the certificate or certificates representing the Offered Shares to be purchased by the Company, duly endorsed in blank by the Participant or with duly endorsed stock powers attached thereto, all in a form suitable for transfer of the Offered Shares to the Company. Promptly following receipt of such certificate or certificates, the Company shall deliver or mail to the Participant a check in payment of the purchase price for such Offered Shares; provided that if the terms of payment set forth in the Transfer Notice were other than cash against delivery, the Company may pay for the Offered Shares on the same terms and conditions as were set forth in the Transfer Notice; and provided further that any delay in making such payment shall not invalidate the Company's exercise of its option to purchase the Offered Shares.

(c) Shares Not Purchased By Company. If the Company does not elect to acquire all of the Offered Shares, the Participant may, within the 30-day period following the expiration of the option granted to the Company under subsection (b) above, transfer the Offered Shares which the Company has not elected to acquire to the proposed transferee, provided that such transfer shall not be on terms and conditions more favorable to the transferee than those contained in the Transfer Notice. Notwithstanding any of the above, all Offered Shares transferred pursuant to this Section 4 shall remain subject to the right of first refusal set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(d) Consequences of Non-Delivery. After the time at which the Offered Shares are required to be delivered to the Company for transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Offered Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Offered Shares, but shall, insofar as permitted by law, treat the Company as the owner of such Offered Shares.

(e) Exempt Transactions. The following transactions shall be exempt from the provisions of this Section 4:

(1) any transfer of Shares to or for the benefit of any spouse, child or grandchild of the Participant, or to a trust for their benefit;

(2) any transfer pursuant to an effective registration statement filed by the Company under the Securities Act of 1933, as amended (the "**Securities Act**"); and

(3) the sale of all or substantially all of the outstanding shares of capital stock of the Company (including pursuant to a merger or consolidation);

provided, however, that in the case of a transfer pursuant to clause (1) above, such Shares shall remain subject to the right of first refusal set forth in this Section 4.

(f) Assignment of Company Right. The Company may assign its rights to purchase Offered Shares in any particular transaction under this Section 4 to one or more persons or entities.

(g) Termination. The provisions of this Section 4 shall terminate upon the earlier of the following events:

(1) the closing of the sale of shares of Common Stock in an underwritten public offering pursuant to an effective registration statement filed by the Company under the Securities Act; or

(2) the sale of all or substantially all of the outstanding shares of capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise (other than a merger or consolidation in which all or substantially all of the individuals and entities who were beneficial owners of the Company's voting securities immediately prior to such transaction beneficially own, directly or indirectly, more than 75% (determined on an as-converted basis) of the outstanding securities entitled to vote generally in the election of directors of the resulting, surviving or acquiring corporation in such transaction).

(h) No Obligation to Recognize Invalid Transfer. The Company shall not be required (1) to transfer on its books any of the Shares which shall have been sold or transferred in violation of any of the provisions set forth in this Section 4, or (2) to treat as owner of such Shares or to pay dividends to any transferee to whom any such Shares shall have been so sold or transferred.

(i) Legends. The certificate representing Shares shall bear a legend substantially in the following form (in addition to, or in combination with, any legend required by applicable federal and state securities laws and agreements relating to the transfer of the Company securities):

> "The shares represented by this certificate are subject to a right of first refusal in favor of the Company, as provided in a certain stock option agreement with the Company."

5. Agreement in Connection with Initial Public Offering.

The Participant agrees, in connection with the initial underwritten public offering of the Common Stock pursuant to a registration statement under the Securities Act, (i) not to (a) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any other securities of the Company or (b) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of shares of Common Stock or other securities of the Company, whether any transaction described in clause (a) or (b) is to be settled by delivery of securities, in cash or otherwise, during the period beginning on the date of the filing of such registration statement with the Securities and Exchange Commission and ending 180 days after the date of the final prospectus relating to the offering (plus up to an additional 34 days to the extent requested by the managing underwriters for such offering in order to address NASD Rule 2711(f)(4) or NYSE Rule 472(f)(4) or any similar successor provision), and (ii) to execute any agreement reflecting clause (i) above as may be requested by the Company or the managing underwriters at the time of such offering. The Company may impose stop-transfer instructions with respect to the shares of Common Stock or other securities subject to the foregoing restriction until the end of the "lock-up" period.

6. Tax Matters.

(a) Withholding. No Shares will be issued pursuant to the exercise of this option unless and until the Participant pays to the Company, or makes provision satisfactory to the Company for payment of, any federal, state or local withholding taxes required by law to be withheld in respect of this option.

(b) Disqualifying Disposition. If the Participant disposes of Shares acquired upon exercise of this option within two years from the Grant Date or one year after such Shares were acquired pursuant to exercise of this option, the Participant shall notify the Company in writing of such disposition.

7. Transfer Restrictions.

(a) This option may not be sold, assigned, transferred, pledged or otherwise encumbered by the Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution, and, during the lifetime of the Participant, this option shall be exercisable only by the Participant.

(b) The Participant agrees that he or she will not transfer any Shares issued pursuant to the exercise of this option unless the transferee, as a condition to such transfer, delivers to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of Section 4 and Section 5; provided that such a written confirmation shall not be required with respect to (1) Section 4 after such provision has terminated in accordance with Section 4(g) or (2) Section 5 after the completion of the lock-up period in connection with the Company's initial underwritten public offering.

8. Provisions of the Plan.

This option is subject to the provisions of the Plan (including the provisions relating to amendments to the Plan), a copy of which is furnished to the Participant with this option.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written. The Participant hereby accepts the foregoing option and agrees to the terms and conditions thereof. The Participant hereby acknowledges receipt of a copy of the Company's 2017 Stock Incentive Plan.

COMPANY:

CARISMA THERAPEUTICS INC.

By: _____
Name: _____
Title: _____

PARTICIPANT:

By: _____
[Name]

Address: [_____]
[_____]

SPOUSAL CONSENT: [1]

By: _____
Name: _____

Address: [_____]
[_____]

[1] If the Participant resides in a community property state, it is desirable to have the Participant's spouse also accept the option. The following are community property states: Arizona, California, Idaho, Louisiana, Nevada, New Mexico, Texas, and Washington. Although Wisconsin is not formally a community property state, it has laws governing the division of marital property similar to community property states and it may be desirable to have a Wisconsin Participant's spouse accept the option.

EXHIBIT A

NOTICE OF STOCK OPTION EXERCISE

[DATE][1]

CARISMA Therapeutics Inc.

3025 Market Street, Ste 140
Philadelphia, PA 19104

Attention: Treasurer

Dear Sir or Madam:

I am the holder of an Incentive Stock Option granted to me under the CARISMA Therapeutics Inc. (the "**Company**") 2017 Stock Incentive Plan on [_____][2] for the purchase of [_____][3] shares of Common Stock of the Company at a purchase price of $[_____][4] per share.

I hereby exercise my option to purchase [_____][5] shares of Common Stock (the "**Shares**"), for which I have enclosed [_____][6] in the amount of [_____][7]. Please register my stock certificate as follows:

Name(s): _____[8]

_____

Address: _____

_____

I represent, warrant and covenant as follows:

---

1 Enter date of exercise.

2 Enter the date of grant.

3 Enter the total number of shares of Common Stock for which the option was granted.

4 Enter the option exercise price per share of Common Stock.

5 Enter the number of shares of Common Stock to be purchased upon exercise of all or part of the option.

6 Enter "cash", "personal check" or if permitted by the option or Plan, "stock certificates No. XXXX and XXXX".

7 Enter the dollar amount (price per share of Common Stock times the number of shares of Common Stock to be purchased), or the number of shares tendered. Fair market value of shares tendered, together with cash or check, must cover the purchase price of the shares issued upon exercise.

8 Enter name(s) to appear on stock certificate in one of the following formats: (a) your name only (i.e., John Doe); (b) your name and other name (i.e., John Doe and Jane Doe, Joint Tenants with Right to Survivorship); or for Nonstatutory Stock Options only, (c) a child's name, with you as custodian (i.e. Jane Doe, Custodian for Tommy Doe). Note: There may be income and/or gift tax consequences for registering shares in a child's name.

1. I am purchasing the Shares for my own account for investment only, and not with a view to, or for sale in connection with, any distribution of the Shares in violation of the Securities Act of 1933 (the "**Securities Act**"), or any rule or regulation under the Securities Act.

2. I have had such opportunity as I have deemed adequate to obtain from representatives of the Company such information as is necessary to permit me to evaluate the merits and risks of my investment in the Company.

3. I have sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

4. I can afford a complete loss of the value of the Shares and am able to bear the economic risk of holding such Shares for an indefinite period.

5. I understand that (i) the Shares have not been registered under the Securities Act and are "restricted securities" within the meaning of Rule 144 under the Securities Act, (ii) the Shares cannot be sold, transferred or otherwise disposed of unless they are subsequently registered under the Securities Act or an exemption from registration is then available; (iii) in any event, the exemption from registration under Rule 144 will not be available for at least one year and even then will not be available unless a public market then exists for the Common Stock, adequate information concerning the Company is then available to the public, and other terms and conditions of Rule 144 are complied with; and (iv) there is now no registration statement on file with the Securities and Exchange Commission with respect to any stock of the Company and the Company has no obligation or current intention to register the Shares under the Securities Act.

Very truly yours,

_____

[Name]

CARISMA THERAPEUTICS INC.
AMENDED AND RESTATED 2014 STOCK INCENTIVE PLAN

1. Purpose

The purpose of this Amended and Restated 2014 Stock Incentive Plan (the "***Plan***") of Carisma Therapeutics Inc. (formerly known as Sesen Bio, Inc.), a Delaware corporation (the "***Company***"), is to advance the interests of the Company's stockholders by enhancing the Company's ability to attract, retain and motivate persons who are expected to make important contributions to the Company and by providing such persons with equity ownership opportunities and performance-based incentives that are intended to better align the interests of such persons with those of the Company's stockholders. The Plan amends and restates the 2014 Stock Incentive Plan (the "***Original Plan***") that was originally adopted by the board of directors of the Company (the "***Board***") in December 2013 and approved by the Company's stockholders in January 2014, was amended by the Board on April 19, 2019 and approved by the Company's stockholders on June 19, 2019, was amended by the Board on March 12, 2021 and approved by the Company's stockholders on May 3, 2021, was amended by the Board on November 17, 2022 and approved by the Company's stockholders on March 2, 2023. Except where the context otherwise requires, the term "***Company***" shall include any of the Company's present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Internal Revenue Code of 1986, as amended, and any regulations thereunder (the "***Code***") and any other business venture (including, without limitation, joint venture or limited liability company) in which the Company has a controlling interest, as determined by the Board.

2. Eligibility

All of the Company's employees, officers and directors, as well as consultants and advisors to the Company (as such terms consultants and advisors are defined and interpreted for purposes of Form S-8 under the Securities Act of 1933, as amended (the "***Securities Act***") (or any successor form)) are eligible to be granted Awards under the Plan. Each person who is granted an Award under the Plan is deemed a "***Participant***." "***Award***" means Options (as defined in Section 5), SARs (as defined in Section 6), Restricted Stock (as defined in Section 7), Restricted Stock Units (as defined in Section 7) and Other Stock-Based Awards (as defined in Section 8).

3. Administration and Delegation

(a) Administration by Board of Directors. The Plan will be administered by the Board. The Board shall have authority to grant Awards and to adopt, amend and repeal such administrative rules, guidelines and practices relating to the Plan as it shall deem advisable. The Board may construe and interpret the terms of the Plan and any Award agreements entered into under the Plan. The Board may correct any defect, supply any omission or reconcile any inconsistency in the Plan or any Award in the manner and to the extent it shall deem expedient and it shall be the sole and final judge of such expediency. All decisions by the Board shall be made in the Board's sole discretion and shall be final and binding on all persons having or claiming any interest in the Plan or in any Award.

(b) Appointment of Committees. To the extent permitted by applicable law, the Board may delegate any or all of its powers under the Plan to one or more committees or subcommittees of the Board (each, a "***Committee***"). All references in the Plan to the "***Board***" shall mean the Board or a Committee of the Board or the Delegated Persons referred to in Section 3(c) to the extent that the Board's powers or authority under the Plan have been delegated to such Committee or such Delegated Persons.

(c) Delegation to Delegated Persons. Subject to any requirements of applicable law (including as applicable Sections 152(b) and 157(c) of the General Corporation Law of the State of Delaware), the Board may, by resolution, delegate to one or more persons (including officers of the Company) or bodies (such persons or bodies, the "***Delegated Persons***") the power to grant Awards (subject to any limitations under the Plan) to eligible service providers of the Company and to exercise such other powers under the Plan as the Board may determine, provided that the Board shall fix: (i) the maximum number of Awards, and the maximum number of shares issuable upon exercise thereof, that may be issued by such Delegated Persons, (ii) the time period during which such Awards, and during which the shares issuable upon exercise thereof, may be issued, and (iii) the minimum amount of consideration (if any) for which such Awards may be issued, and a minimum amount of consideration for the shares issuable upon exercise thereof; and provided further, that no Delegated Person shall be authorized to grant Awards to itself; and provided further, that no Delegated Person shall be authorized to grant Awards to any "executive officer" of the Company (as defined by Rule 3b-7 under the Securities Exchange Act of 1934, as amended (the "***Exchange Act***")) or to any "officer" of the Company (as defined by Rule 16a-1(f) under the Exchange Act).

4. Stock Available for Awards

(a) Number of Shares; Share Counting

(1) Authorized Number of Shares. Subject to adjustment under Section 9, Awards may be made under the Plan for up to such number of shares of common stock, $0.001 par value per share, of the Company (the "***Common Stock***") as is equal to the sum of:

(i) an aggregate number of shares of Common Stock equal to 12.79% of the fully-diluted capitalization of the Company as of immediately following the closing of the transactions contemplated by the Agreement and Plan of Merger and Reorganization between the Company, Seahawk Merger Sub Inc. and Carisma Therapeutics Inc. (as it may be amended from time to time, the "***Merger Agreement***" minus the number of shares of Common Stock that remain available for the grant of Awards as of the closing of the transactions contemplated by the Merger Agreement); plus

(ii) 1,265,664 shares of Common Stock; plus

(iii) such additional number of shares of Common Stock as is equal to the sum of (x) the number of shares of Common Stock reserved for issuance under the Company's 2009 Stock Incentive Plan (the "***Prior Plan***") that remained available for grant under the Prior Plan immediately prior to the closing of the Company's initial public offering and (y) the number of shares of Common Stock (I) that were subject to awards granted under the Prior Plan and (II) that are subject to stock options assumed by the Company pursuant to the Merger Agreement, as of the closing of the transactions contemplated by the Merger Agreement (the awards described in the foregoing clauses (I) and (II) together, the "***Outstanding Awards***") in each case which Outstanding Awards expire, terminate or are otherwise surrendered, canceled, forfeited or repurchased by the Company at their original issuance price pursuant to a contractual repurchase right (subject, however, in the case of Incentive Stock Options to any limitations of the Code).

Subject to adjustment under Section 9, up to 12,600,000 of the shares of Common Stock available for issuance under the Plan may be issued as Incentive Stock Options (as defined in Section 5(b)) under the Plan. Shares issued under the Plan may consist in whole or in part of authorized but unissued shares or treasury shares.

(2) Share Counting. For purposes of counting the number of shares available for the grant of Awards under the Plan:

(i) all shares of Common Stock covered by SARs shall be counted against the number of shares available for the grant of Awards under the Plan; *provided*, *however*, that (i) SARs that may be settled only in cash shall not be so counted and (ii) if the Company grants an SAR in tandem with an Option for the same number of shares of Common Stock and provides that only one such Award may be exercised (a "***Tandem SAR***"), only the shares covered by the Option, and not the shares covered by the Tandem SAR, shall be so counted, and the expiration of one in connection with the other's exercise will not restore shares to the Plan;

(ii) if any Award (i) expires or is terminated, surrendered or canceled without having been fully exercised or is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at the original issuance price pursuant to a contractual repurchase right) or (ii) results in any Common Stock not being issued (including as a result of an SAR that was settleable either in cash or in stock actually being settled in cash), the unused Common Stock covered by such Award shall again be available for the grant of Awards; *provided*, *however*, that (1) in the case of Incentive Stock Options, the foregoing shall be subject to any limitations under the Code, (2) in the case of the exercise of an SAR, the number of shares counted against the shares available under the Plan shall be the full number of shares subject to the SAR multiplied by the percentage of the SAR actually exercised, regardless of the number of shares actually used to settle such SAR upon exercise and (3) the shares covered by a Tandem SAR shall not again become available for grant upon the expiration or termination of such Tandem SAR; and

(iii) shares of Common Stock delivered (either by actual delivery, attestation, or net exercise) to the Company by a Participant to (i) purchase shares of Common Stock upon the exercise of an Award or (ii) satisfy tax withholding obligations (including shares retained from the Award creating the tax obligation) shall not be added back to the number of shares available for the future grant of Awards.

(b) Substitute Awards. In connection with a merger or consolidation of an entity with the Company or the acquisition by the Company of property or stock of an entity, the Board may grant Awards in substitution for any options or other stock or stock-based awards granted by such entity or an affiliate thereof. Substitute Awards may be granted on such terms as the Board deems appropriate in the circumstances, notwithstanding any limitations on Awards contained in the Plan. Substitute Awards shall not count against the overall share limit set forth in Section 4(a), except as may be required by reason of Section 422 and related provisions of the Code.

5. Stock Options

(a) General. The Board may grant options to purchase Common Stock (each, an "***Option***") and determine the number of shares of Common Stock to be covered by each Option, the exercise price of each Option and the conditions and limitations applicable to the exercise of each Option, including conditions relating to applicable federal or state securities laws, as it considers necessary or advisable.

(b) Incentive Stock Options. An Option that the Board intends to be an "incentive stock option" as defined in Section 422 of the Code (an "***Incentive Stock Option***") shall only be granted to employees of Carisma Therapeutics Inc. (formerly known as Sesen Bio, Inc.), any of Carisma Therapeutics Inc.'s present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Code, and any other entities the employees of which are eligible to receive Incentive Stock Options under the Code, and shall be subject to and shall be construed consistently with the requirements of Section 422 of the Code. An Option that is not intended to be an Incentive Stock Option shall be designated a "***Nonstatutory Stock Option.***" The Company shall have no liability to a Participant, or any other party, if an Option (or any part thereof) that is intended to be an Incentive Stock Option is not an Incentive Stock Option or if the Company converts an Incentive Stock Option to a Nonstatutory Stock Option.

(c) Exercise Price. The Board shall establish the exercise price of each Option and specify the exercise price in the applicable Option agreement. The exercise price shall be not less than 100% of the fair market value per share of Common Stock, as determined by (or in a manner approved by) the Board ("***Fair Market Value***"), on the date the Option is granted; *provided* that if the Board approves the grant of an Option with an exercise price to be determined on a future date, the exercise price shall be not less than 100% of the Fair Market Value on such future date.

(d) Duration of Options. Each Option shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable option agreement; *provided*, *however*, that no Option will be granted with a term in excess of 10 years.

(e) Exercise of Options. Options may be exercised by delivery to the Company of a notice of exercise in a form (which may be electronic) approved by the Company, together with payment in full (in a manner specified in Section 5(f)) of the exercise price for the number of shares for which the Option is exercised. Shares of Common Stock subject to the Option will be delivered by the Company as soon as practicable following exercise.

(f) Payment Upon Exercise. Common Stock purchased upon the exercise of an Option granted under the Plan shall be paid for as follows:

(1) in cash or by check, payable to the order of the Company;

(2) except as may otherwise be provided in the applicable Option agreement or approved by the Board, in its sole discretion, by (i) delivery of an irrevocable and unconditional undertaking by a creditworthy broker to deliver promptly to the Company sufficient funds to pay the exercise price and any required tax withholding or (ii) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a creditworthy broker to deliver promptly to the Company cash or a check sufficient to pay the exercise price and any required tax withholding;

(3) to the extent provided for in the applicable Option agreement or approved by the Board, in its sole discretion, by delivery (either by actual delivery or attestation) of shares of Common Stock owned by the Participant valued at their Fair Market Value, *provided* (i) such method of payment is then permitted under applicable law, (ii) such Common Stock, if acquired directly from the Company, was owned by the Participant for such minimum period of time, if any, as may be established by the Board in its discretion and (iii) such Common Stock is not subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements;

(4) to the extent provided for in the applicable Nonstatutory Stock Option agreement or approved by the Board in its sole discretion, by delivery of a notice of "net exercise" to the Company, as a result of which the Participant would receive (i) the number of shares underlying the portion of the Option being exercised, less (ii) such number of shares as is equal to (A) the aggregate exercise price for the portion of the Option being exercised divided by (B) the Fair Market Value on the date of exercise;

(5) to the extent permitted by applicable law and provided for in the applicable Option agreement or approved by the Board, in its sole discretion, by payment of such other lawful consideration as the Board may determine; or

(6) by any combination of the above permitted forms of payment.

(g) Limitation on Repricing. Unless such action is approved by the Company's stockholders, the Company may not (except as provided for under Section 9): (1) amend any outstanding Option granted under the Plan to provide an exercise price per share that is lower than the then-current exercise price per share of such outstanding Option, (2) cancel any outstanding option (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan (other than Awards granted pursuant to Section 4(b)) covering the same or a different number of shares of Common Stock and having an exercise price per share lower than the then-current exercise price per share of the cancelled option, (3) cancel in exchange for a cash payment any outstanding Option with an exercise price per share above the then-current Fair Market Value, or (4) take any other action under the Plan that constitutes a "repricing" within the meaning of the rules of the Nasdaq Stock Market ("***Nasdaq***").

6. Stock Appreciation Rights

(a) General. The Board may grant Awards consisting of stock appreciation rights ("***SARs***") entitling the holder, upon exercise, to receive an amount of Common Stock or cash or a combination thereof (such form to be determined by the Board) determined by reference to appreciation, from and after the date of grant, in the Fair Market Value of a share of Common Stock over the measurement price established pursuant to Section 6(b). The date as of which such appreciation is determined shall be the exercise date.

(b) Measurement Price. The Board shall establish the measurement price of each SAR and specify it in the applicable SAR agreement. The measurement price shall not be less than 100% of the Fair Market Value on the date the SAR is granted; *provided* that if the Board approves the grant of an SAR effective as of a future date, the measurement price shall be not less than 100% of the Fair Market Value on such future date.

(c) Duration of SARs. Each SAR shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable SAR agreement; *provided*, *however*, that no SAR will be granted with a term in excess of 10 years.

(d) Exercise of SARs. SARs may be exercised by delivery to the Company of a notice of exercise in a form (which may be electronic) approved by the Company, together with any other documents required by the Board.

(e) Limitation on Repricing. Unless such action is approved by the Company's stockholders, the Company may not (except as provided for under Section 9): (1) amend any outstanding SAR granted under the Plan to provide a measurement price per share that is lower than the then-current measurement price per share of such outstanding SAR, (2) cancel any outstanding SAR (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan (other than Awards granted pursuant to Section 4(b)) covering the same or a different number of shares of Common Stock and having an exercise or measurement price per share lower than the then-current measurement price per share of the cancelled SAR, (3) cancel in exchange for a cash payment any outstanding SAR with a measurement price per share above the then-current Fair Market Value, or (4) take any other action under the Plan that constitutes a "repricing" within the meaning of the rules of Nasdaq.

7. Restricted Stock; Restricted Stock Units

(a) General. The Board may grant Awards entitling recipients to acquire shares of Common Stock ("***Restricted Stock***"), subject to the right of the Company to repurchase all or part of such shares at their issue price or other stated or formula price (or to require forfeiture of such shares if issued at no cost) from the recipient in the event that conditions specified by the Board in the applicable Award are not satisfied prior to the end of the applicable restriction period or periods established by the Board for such Award. The Board may also grant Awards entitling the recipient to receive shares of Common Stock or cash to be delivered at the time such Award vests ("***Restricted Stock Units***") (Restricted Stock and Restricted Stock Units are each referred to herein as a "***Restricted Stock Award***").

(b) Terms and Conditions for All Restricted Stock Awards. The Board shall determine the terms and conditions of a Restricted Stock Award, including the conditions for vesting and repurchase (or forfeiture) and the issue price, if any.

(c) Additional Provisions Relating to Restricted Stock

(1) Dividends. Unless otherwise provided in the applicable Award agreement, any dividends (whether paid in cash, stock or property) declared and paid by the Company with respect to shares of Restricted Stock ("***Accrued Dividends***") shall be paid to the Participant only if and when such shares become free from the restrictions on transferability and forfeitability that apply to such shares. Each payment of Accrued Dividends will be made no later than the end of the calendar year in which the dividends are paid to stockholders of that class of stock or, if later, the 15th day of the third month following the lapsing of the restrictions on transferability and the forfeitability provisions applicable to the underlying shares of Restricted Stock.

(2) Stock Certificates. The Company may require that any stock certificates issued in respect of shares of Restricted Stock, as well as dividends or distributions paid on such Restricted Stock, shall be deposited in escrow by the Participant, together with a stock power endorsed in blank, with the Company (or its designee). At the expiration of the applicable restriction periods, the Company (or such designee) shall deliver the certificates no longer subject to such restrictions to the Participant or if the Participant has died, to his or her Designated Beneficiary. "***Designated Beneficiary***" means (i) the beneficiary designated, in a manner determined by the Board, by a Participant to receive amounts due or exercise rights of the Participant in the event of the Participant's death or (ii) in the absence of an effective designation by a Participant, the Participant's estate.

(d) Additional Provisions Relating to Restricted Stock Units

(1) Settlement. Upon the vesting of and/or lapsing of any other restrictions (i.e., settlement) with respect to each Restricted Stock Unit, the Participant shall be entitled to receive from the Company such number of shares of Common Stock or (if so provided in the applicable Award agreement) an amount of cash equal to the Fair Market Value of such number of shares of Common Stock as set forth in the applicable Award agreement. The Board may, in its discretion, provide that settlement of Restricted Stock Units shall be deferred, on a mandatory basis or at the election of the Participant in a manner that complies with Section 409A of the Code.

(2) Voting Rights. A Participant shall have no voting rights with respect to any Restricted Stock Units.

(3) Dividend Equivalents. The Award agreement for Restricted Stock Units may provide Participants with the right to receive an amount equal to any dividends or other distributions declared and paid on an equal number of outstanding shares of Common Stock ("***Dividend Equivalents***"). Dividend Equivalents may be paid currently or credited to an account for the Participants, may be settled in cash and/or shares of Common Stock and may be subject to the same restrictions on transfer and forfeitability as the Restricted Stock Units with respect to which paid, in each case to the extent provided in the applicable Award agreement.

8. Other Stock-Based Awards

(a) General. Other Awards of shares of Common Stock, and other Awards that are valued in whole or in part by reference to, or are otherwise based on, shares of Common Stock or other property, may be granted hereunder to Participants ("***Other Stock-Based Awards***"). Such Other Stock-Based Awards shall also be available as a form of payment in the settlement of other Awards granted under the Plan or as payment in lieu of compensation to which a Participant is otherwise entitled. Other Stock-Based Awards may be paid in shares of Common Stock or cash, as the Board shall determine.

(b) Terms and Conditions. Subject to the provisions of the Plan, the Board shall determine the terms and conditions of each Other Stock-Based Award, including any purchase price applicable thereto.

9. Adjustments for Changes in Common Stock and Certain Other Events

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under the Plan and the number and class of securities available for issuance as Incentive Stock Options under the Plan, (ii) the share counting rules set forth in Section 4(a), (iii) the number and class of securities and exercise price per share of each outstanding Option, (iv) the share and per-share provisions and the measurement price of each outstanding SAR, (v) the number of shares subject to and the repurchase price per share subject to each outstanding Restricted Stock Award and (vi) the share and per-share-related provisions and the purchase price, if any, of each outstanding Other Stock-Based Award, shall be equitably adjusted by the Company (or substituted Awards may be made, if applicable) in the manner determined by the Board. Without limiting the generality of the foregoing, in the event the Company effects a split of the Common Stock by means of a stock dividend and the exercise price of and the number of shares subject to an outstanding Option are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend), then an optionee who exercises an Option between the record date and the distribution date for such stock dividend shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon such Option exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

(b) Reorganization Events

(1) Definition. A "***Reorganization Event***" shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (b) any transfer or disposition of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange or other transaction or (c) any liquidation or dissolution of the Company.

(2) Consequences of a Reorganization Event on Awards Other than Restricted Stock

(i) In connection with a Reorganization Event, the Board may take any one or more of the following actions as to all or any (or any portion of) outstanding Awards other than Restricted Stock on such terms as the Board determines (except to the extent specifically provided otherwise in an applicable Award agreement or another agreement between the Company and the Participant): (i) provide that such Awards shall be assumed, or substantially equivalent Awards shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (ii) upon written notice to a Participant, provide that all of the Participant's unvested and/or unexercised Awards will terminate immediately prior to the consummation of such Reorganization Event unless exercised by the Participant (to the extent then exercisable) within a specified period following the date of such notice, (iii) provide that outstanding Awards shall become exercisable, realizable, or deliverable, or restrictions applicable to an Award shall lapse, in whole or in part prior to or upon such Reorganization Event, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the "***Acquisition Price***"), make or provide for a cash payment to Participants with respect to each Award held by a Participant equal to (A) the number of shares of Common Stock subject to the vested portion of the Award (after giving effect to any acceleration of vesting that occurs upon or immediately prior to such Reorganization Event) multiplied by (B) the excess, if any, of (I) the Acquisition Price over (II) the exercise, measurement or purchase price of such Award and any applicable tax withholdings, in exchange for the termination of such Award, (v) provide that, in connection with a liquidation or dissolution of the Company, Awards shall convert into the right to receive liquidation proceeds (if applicable, net of the exercise, measurement or purchase price thereof and any applicable tax withholdings) and (vi) any combination of the foregoing. In taking any of the actions permitted under this Section 9(b)(2), the Board shall not be obligated by the Plan to treat all Awards, all Awards held by a Participant, or all Awards of the same type, identically.

(ii) Notwithstanding the terms of Section 9(b)(2)(i), in the case of outstanding Restricted Stock Units that are subject to Section 409A of the Code: (i) if the applicable Restricted Stock Unit agreement provides that the Restricted Stock Units shall be settled upon a "change in control event" within the meaning of Treasury Regulation Section 1.409A-3(i)(5)(i), and the Reorganization Event constitutes such a "change in control event", then no assumption or substitution shall be permitted pursuant to Section 9(b)(2)(i)(i) and the Restricted Stock Units shall instead be settled in accordance with the terms of the applicable Restricted Stock Unit agreement; and (ii) the Board may only undertake the actions set forth in clauses (iii), (iv) or (v) of Section 9(b)(2)(i) if the Reorganization Event constitutes a "change in control event" as defined under Treasury Regulation Section 1.409A-3(i)(5)(i) and such action is permitted or required by Section 409A of the Code; if the Reorganization Event is not a "change in control event" as so defined or such action is not permitted or required by Section 409A of the Code, and the acquiring or succeeding corporation does not assume or substitute the Restricted Stock Units pursuant to clause (i) of Section 9(b)(2)(i), then the unvested Restricted Stock Units shall terminate immediately prior to the consummation of the Reorganization Event without any payment in exchange therefor.

(iii) For purposes of Section 9(b)(2)(i)(i), an Award (other than Restricted Stock) shall be considered assumed if, following consummation of the Reorganization Event, such Award confers the right to purchase or receive pursuant to the terms of such Award, for each share of Common Stock subject to the Award immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); *provided*, *however*, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise or settlement of the Award to consist solely of such number of shares of common stock of the acquiring or succeeding corporation (or an affiliate thereof) that the Board determined to be equivalent in value (as of the date of such determination or another date specified by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

(3) Consequences of a Reorganization Event on Restricted Stock. Upon the occurrence of a Reorganization Event other than a liquidation or dissolution of the Company, the repurchase and other rights of the Company with respect to outstanding Restricted Stock shall inure to the benefit of the Company's successor and shall, unless the Board determines otherwise, apply to the cash, securities or other property which the Common Stock was converted into or exchanged for pursuant to such Reorganization Event in the same manner and to the same extent as they applied to such Restricted Stock; *provided*, *however*, that the Board may provide for termination or deemed satisfaction of such repurchase or other rights under the instrument evidencing any Restricted Stock or any other agreement between a Participant and the Company, either initially or by amendment. Upon the occurrence of a Reorganization Event involving the liquidation or dissolution of the Company, except to the extent specifically provided to the contrary in the instrument evidencing any Restricted Stock or any other agreement between a Participant and the Company, all restrictions and conditions on all Restricted Stock then outstanding shall automatically be deemed terminated or satisfied.

10. General Provisions Applicable to Awards

(a) Transferability of Awards. Awards shall not be sold, assigned, transferred, pledged or otherwise encumbered by the person to whom they are granted, either voluntarily or by operation of law, except by will or the laws of descent and distribution or, other than in the case of an Incentive Stock Option, pursuant to a qualified domestic relations order, and, during the life of the Participant, shall be exercisable only by the Participant; *provided*, *however*, that the Board may permit or provide in an Award for the gratuitous transfer of the Award by the Participant to or for the benefit of any immediate family member, family trust or other entity established for the benefit of the Participant and/or an immediate family member thereof if the Company would be eligible to use a Form S-8 under the Securities Act for the registration of the sale of the Common Stock subject to such Award to such proposed transferee; *provided further*, that the Company shall not be required to recognize any such permitted transfer until such time as such permitted transferee shall, as a condition to such transfer, deliver to the Company a written instrument in form and substance satisfactory to the Company confirming that such transferee shall be bound by all of the terms and conditions of the Award. References to a Participant, to the extent relevant in the context, shall include references to authorized transferees. For the avoidance of doubt, nothing contained in this Section 10(a) shall be deemed to restrict a transfer to the Company.

(b) Documentation. Each Award shall be evidenced in such form (written, electronic or otherwise) as the Board shall determine. Each Award may contain terms and conditions in addition to those set forth in the Plan.

(c) Board Discretion. Except as otherwise provided by the Plan, each Award may be made alone or in addition or in relation to any other Award. The terms of each Award need not be identical, and the Board need not treat Participants uniformly.

(d) Termination of Status. The Board shall determine the effect on an Award of the disability, death, termination or other cessation of employment, authorized leave of absence or other change in the employment or other status of a Participant and the extent to which, and the period during which, the Participant, or the Participant's legal representative, conservator, guardian or Designated Beneficiary, may exercise rights under the Award.

(e) Withholding. The Participant must satisfy all applicable federal, state, and local or other income and employment tax withholding obligations before the Company will deliver stock certificates or otherwise recognize ownership of Common Stock under an Award. The Company may decide to satisfy the withholding obligations through additional withholding on salary or wages. If the Company elects not to or cannot withhold from other compensation, the Participant must pay the Company the full amount, if any, required for withholding or have a broker tender to the Company cash equal to the withholding obligations. Payment of withholding obligations is due before the Company will issue any shares on exercise, vesting or release from forfeiture of an Award or at the same time as payment of the exercise or purchase price unless the Company determines otherwise. If provided for in an Award or approved by the Board in its sole discretion, a Participant may satisfy such tax obligations in whole or in part by delivery (either by actual delivery or attestation) of shares of Common Stock, including shares retained from the Award creating the tax obligation, valued at their Fair Market Value; *provided*, *however*, except as otherwise provided by the Board, that the total tax withholding where stock is being used to satisfy such tax obligations cannot exceed the Company's minimum statutory withholding obligations (based on minimum statutory withholding rates for federal and state tax purposes, including payroll taxes, that are applicable to such supplemental taxable income), except that, to the extent that the Company is able to retain shares of Common Stock having a fair market value (determined or approved by the Company) that exceeds the statutory minimum applicable withholding tax without financial accounting implications or the Company is withholding in a jurisdiction that does not have a statutory minimum withholding tax, the Company may retain such number of shares of Common Stock (up to the number of shares having a fair market value equal to the maximum individual statutory rate of tax (determined or approved by, the Company)) as the Company shall determine to be necessary to satisfy the tax liability associated with any Award. Shares used to satisfy tax withholding requirements cannot be subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements.

(f) Amendment of Award. Except as otherwise provided in Sections 5(g) and 6(e) with respect to repricings and Section 11(d) with respect to actions requiring stockholder approval, the Board may amend, modify or terminate any outstanding Award, including but not limited to, substituting therefor another Award of the same or a different type, changing the date of exercise or realization, and converting an Incentive Stock Option to a Nonstatutory Stock Option. The Participant's consent to such action shall be required unless (i) the Board determines that the action, taking into account any related action, does not materially and adversely affect the Participant's rights under the Plan or (ii) the change is permitted under Section 9.

(g) Conditions on Delivery of Stock. The Company will not be obligated to deliver any shares of Common Stock pursuant to the Plan or to remove restrictions from shares previously issued or delivered under the Plan until (i) all conditions of the Award have been met or removed to the satisfaction of the Company, (ii) in the opinion of the Company's counsel, all other legal matters in connection with the issuance and delivery of such shares have been satisfied, including any applicable securities laws and regulations and any applicable stock exchange or stock market rules and regulations, and (iii) the Participant has executed and delivered to the Company such representations or agreements as the Company may consider appropriate to satisfy the requirements of any applicable laws, rules or regulations.

(h) Acceleration. The Board may at any time provide that any Award shall become immediately exercisable in whole or in part, free of some or all restrictions or conditions, or otherwise realizable in whole or in part, as the case may be.

11. Miscellaneous

(a) No Right To Employment or Other Status. No person shall have any claim or right to be granted an Award by virtue of the adoption of the Plan, and the grant of an Award shall not be construed as giving a Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under the Plan, except as expressly provided in the applicable Award.

(b) No Rights As Stockholder; Clawback. Subject to the provisions of the applicable Award, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be distributed with respect to an Award until becoming the record holder of such shares. In accepting an Award made under the Plan on and after the Closing Date (as defined in Section 11(c)), the Participant agrees to be bound by any clawback policy that the Company has in effect or may adopt in the future.

(c) Effective Date and Term of Plan. The Original Plan became effective immediately prior to the closing of the Company's initial public stock offering of its Common Stock on a U.S.-based stock exchange whereby the Company's shares of Common Stock are offered for sale to the public. The Plan shall become effective on the closing of the transactions contemplated by the Merger Agreement (the "***Closing Date***"). No Awards shall be granted under the Plan after the expiration of 10 years from the Closing Date, but Awards previously granted may extend beyond that date.

(d) Amendment of Plan. The Board may amend, suspend or terminate the Plan or any portion thereof at any time provided that (i) to the extent required by Section 162(m) of the Code, no Award granted to a Participant that is intended to comply with Section 162(m) of the Code after the date of such amendment shall become exercisable, realizable or vested, as applicable to such Award, unless and until the Company's stockholders approve such amendment in the manner required by Section 162(m) of the Code; and (ii) no amendment that would require stockholder approval under the rules of the Nasdaq Stock Market may be made effective unless and until the Company's stockholders approve such amendment. In addition, if at any time the approval of the Company's stockholders is required as to any other modification or amendment under Section 422 of the Code or any successor provision with respect to Incentive Stock Options, the Board may not effect such modification or amendment without such approval. Unless otherwise specified in the amendment, any amendment to the Plan adopted in accordance with this Section 11(d) shall apply to, and be binding on the holders of, all Awards outstanding under the Plan at the time the amendment is adopted, provided the Board determines that such amendment, taking into account any related action, does not materially and adversely affect the rights of Participants under the Plan. No Award shall be made that is conditioned upon stockholder approval of any amendment to the Plan unless the Award provides that (i) it will terminate or be forfeited if stockholder approval of such amendment is not obtained within no more than 12 months from the date of grant and (2) it may not be exercised or settled (or otherwise result in the issuance of Common Stock) prior to such stockholder approval.

(e) Authorization of Sub-Plans (including Grants to non-U.S. Employees). The Board may from time to time establish one or more sub-plans under the Plan for purposes of satisfying applicable securities, tax or other laws of various jurisdictions. The Board shall establish such sub-plans by adopting supplements to the Plan containing (i) such limitations on the Board's discretion under the Plan as the Board deems necessary or desirable or (ii) such additional terms and conditions not otherwise inconsistent with the Plan as the Board shall deem necessary or desirable. All supplements adopted by the Board shall be deemed to be part of the Plan, but each supplement shall apply only to Participants within the affected jurisdiction and the Company shall not be required to provide copies of any supplement to Participants in any jurisdiction which is not the subject of such supplement.

(f) Compliance with Section 409A of the Code. Except as provided in individual Award agreements initially or by amendment, if and to the extent (i) any portion of any payment, compensation or other benefit provided to a Participant pursuant to the Plan in connection with his or her employment termination constitutes "nonqualified deferred compensation" within the meaning of Section 409A of the Code and (ii) the Participant is a specified employee as defined in Section 409A(a)(2)(B)(i) of the Code, in each case as determined by the Company in accordance with its procedures, by which determinations the Participant (through accepting the Award) agrees that he or she is bound, such portion of the payment, compensation or other benefit shall not be paid before the day that is six months plus one day after the date of "separation from service" (as determined under Section 409A of the Code) (the "***New Payment Date***"), except as Section 409A of the Code may then permit. The aggregate of any payments that otherwise would have been paid to the Participant during the period between the date of separation from service and the New Payment Date shall be paid to the Participant in a lump sum on such New Payment Date, and any remaining payments will be paid on their original schedule.

The Company makes no representations or warranty and shall have no liability to the Participant or any other person if any provisions of or payments, compensation or other benefits under the Plan are determined to constitute nonqualified deferred compensation subject to Section 409A of the Code but do not to satisfy the conditions of that section.

(g) Limitations on Liability. Notwithstanding any other provisions of the Plan, no individual acting as a director, officer, employee, or agent of the Company will be liable to any Participant, former Participant, spouse, beneficiary, or any other person for any claim, loss, liability, or expense incurred in connection with the Plan, nor will such individual be personally liable with respect to the Plan because of any contract or other instrument he or she executes in his or her capacity as a director, officer, employee, or agent of the Company. The Company will indemnify and hold harmless each director, officer, employee, or agent of the Company to whom any duty or power relating to the administration or interpretation of the Plan has been or will be delegated, against any cost or expense (including attorneys' fees) or liability (including any sum paid in settlement of a claim with the Board's approval) arising out of any act or omission to act concerning the Plan unless arising out of such person's own fraud or bad faith.

(h) Governing Law. The provisions of the Plan and all Awards made hereunder shall be governed by and interpreted in accordance with the laws of the State of Delaware, excluding choice-of-law principles of the law of such state that would require the application of the laws of a jurisdiction other than the State of Delaware.

Exhibit 10.14

Carisma Therapeutics Inc.
STOCK OPTION AGREEMENT

Carisma Therapeutics Inc. (the "Company") hereby grants the following stock option pursuant to its Amended and Restated 2014 Stock Incentive Plan. The terms and conditions attached hereto are also a part hereof.

Notice of Grant

Name of optionee (the "Participant"):	
Grant Date:	
Incentive Stock Option or Nonstatutory Stock Option:	
Number of shares of the Company's Common Stock subject to this option ("Shares"):	
Option exercise price per Share: [1]	
Vesting Start Date:	
Final Exercise Date: [2]	

Vesting Schedule:

Vesting Date:	Number of Options that Vest:
All vesting is dependent on the Participant remaining an Eligible Participant, as provided herein.	

This option satisfies in full all commitments that the Company has to the Participant with respect to the issuance of stock, stock options or other equity securities.

Signature of Participant

Street Address

City/State/Zip Code

Carisma Therapeutics Inc.

By: _____
Name of Officer
Title:

[1] This must be at least 100% of the Grant Date Fair Market Value (as defined in the Plan) of the Common Stock on the date of grant (110% in the case of a Participant that owns more than 10% of the total combined voting power of all classes of stock of the Company or its parent or subsidiary (a "10% Shareholder")) for the option to qualify as an incentive stock option (an "ISO") under Section 422 of the Internal Revenue Code.

[2] The Final Exercise Date must be no more than 10 years (5 years in the case of a 10% Shareholder) from the date of grant for the option to qualify as an ISO. The correct approach to calculate the final exercise date is to use the day immediately prior to the date ten years out from the date of the stock option award grant (5 years in the case of a 10% stockholder).

Carisma Therapeutics Inc.

Stock Option Agreement
Incorporated Terms and Conditions

1. Grant of Option.

This agreement evidences the grant by the Company, on the grant date (the "Grant Date") set forth in the Notice of Grant that forms part of this agreement (the "Notice of Grant"), to the Participant of an option to purchase, in whole or in part, on the terms provided herein and in the Company's Amended and Restated 2014 Stock Incentive Plan (the "Plan"), the number of Shares set forth in the Notice of Grant of common stock, $0.001 par value per share, of the Company ("Common Stock"), at the exercise price per Share set forth in the Notice of Grant. Unless earlier terminated, this option shall expire at 5:00 p.m., Eastern time, on the Final Exercise Date set forth in the Notice of Grant (the "Final Exercise Date").

The option evidenced by this agreement is intended to be an incentive stock option as defined in Section 422 of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code") to the maximum extent permitted by law, solely to the extent designated as an incentive stock option in the Notice of Grant. To the extent not designated as an incentive stock option, or to the extent that the option does not qualify as an incentive stock option, the option shall be a nonstatutory stock option. Except as otherwise indicated by the context, the term "Participant", as used in this option, shall be deemed to include any person who acquires the right to exercise this option validly under its terms.

2. Vesting Schedule.

This option will become exercisable ("vest") in accordance with the vesting schedule set forth in the Notice of Grant.

The right of exercise shall be cumulative so that to the extent the option is not exercised in any period to the maximum extent permissible it shall continue to be exercisable, in whole or in part, with respect to all Shares for which it is vested until the earlier of the Final Exercise Date or the termination of this option under Section 3 hereof or the Plan.

3. Exercise of Option.

(a) Form of Exercise. Each election to exercise this option shall be in writing, in the form of the Stock Option Exercise Notice attached as Annex A, signed by the Participant, and received by the Company at its principal office, accompanied by this agreement, or in such other form (which may be electronic) as is approved by the Company, together with payment in full in the manner provided in the Plan. The Participant may purchase less than the number of shares covered hereby, provided that no partial exercise of this option may be for any fractional share.

(b) Continuous Relationship with the Company Required. Except as otherwise provided in this Section 3, this option may not be exercised unless the Participant, at the time he or she exercises this option, is, and has been at all times since the Grant Date, an employee, director or officer of, or consultant or advisor to, the Company or any other entity the employees, officers, directors, consultants, or advisors of which are eligible to receive option grants under the Plan (an "Eligible Participant").

(c) Termination of Relationship with the Company. If the Participant ceases to be an Eligible Participant for any reason, then, except as provided in paragraphs (d) and (e) below, the right to exercise this option shall terminate three months after such cessation (but in no event after the Final Exercise Date), provided that this option shall be exercisable only to the extent that the Participant was entitled to exercise this option on the date of such cessation. Notwithstanding the foregoing, if the Participant, prior to the Final Exercise Date, violates the restrictive covenants (including, without limitation, the non-competition, non-solicitation, or confidentiality provisions) of any employment contract, any non-competition, non-solicitation, confidentiality or assignment agreement to which the Participant is a party, or any other agreement between the Participant and the Company, the right to exercise this option shall terminate immediately upon such violation.

(d) Exercise Period Upon Death or Disability. If the Participant dies or becomes disabled (within the meaning of Section 22(e)(3) of the Code) prior to the Final Exercise Date while he or she is an Eligible Participant and the Company has not terminated such relationship for "cause" as specified in paragraph (e) below, this option shall be exercisable, within the period of one year following the date of death or disability of the Participant, by the Participant (or in the case of death by an authorized transferee), provided that this option shall be exercisable only to the extent that this option was exercisable by the Participant on the date of his or her death or disability, and further provided that this option shall not be exercisable after the Final Exercise Date.

(e) Termination for Cause. If, prior to the Final Exercise Date, the Participant's employment or other relationship with the Company is terminated by the Company for Cause (as defined in below), the right to exercise this option shall terminate immediately upon the effective date of such termination of employment or other service relationship. If, prior to the Final Exercise Date, the Participant is given notice by the Company of the termination of his or her employment or other relationship by the Company for Cause, and the effective date of such employment or other termination is subsequent to the date of delivery of such notice, the right to exercise this option shall be suspended from the time of the delivery of such notice until the earlier of (i) such time as it is determined or otherwise agreed that the Participant's employment or other relationship shall not be terminated for Cause as provided in such notice or (ii) the effective date of such termination of employment or other relationship (in which case the right to exercise this option shall, pursuant to the preceding sentence, terminate immediately upon the effective date of such termination of employment or other relationship). If the Participant is subject to an individual employment or consulting agreement with the Company or eligible to participate in a Company severance plan or arrangement, in any case which agreement, plan or arrangement contains a definition of "cause" for termination of employment or other relationship, "Cause" shall have the meaning ascribed to such term in such agreement, plan or arrangement. Otherwise, "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform his or her responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant's employment or other relationship shall be considered to have been terminated for Cause if the Company determines, within 30 days after the Participant's resignation, that termination for Cause was warranted.

4. Tax Matters.

(a) Withholding. No Shares will be issued pursuant to the exercise of this option unless and until the Participant pays to the Company, or makes provision satisfactory to the Company for payment of, any federal, state or local withholding taxes required by law to be withheld in respect of this option.

(b) Disqualifying Disposition. If this option is an incentive stock option and the Participant disposes of Shares acquired upon exercise of this option within two years from the Grant Date or one year after such Shares were acquired pursuant to exercise of this option, the Participant shall notify the Company in writing of such disposition.

5. Transfer Restrictions; Clawback.

(a) This option may not be sold, assigned, transferred, pledged, encumbered or otherwise disposed of by the Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution, and, during the lifetime of the Participant, this option shall be exercisable only by the Participant.

(b) In accepting this option, the Participant agrees to be bound by any clawback policy that the Company has in place or may adopt in the future.

6. Provisions of the Plan.

This option is subject to the provisions of the Plan (including the provisions relating to amendments to the Plan), a copy of which is furnished to the Participant with this option.

ANNEX A

Carisma Therapeutics

Stock Option Exercise Notice

Carisma Therapeutics Inc.
3675 Market Street, Suite 200
Philadelphia, PA 19104

Dear Sir or Madam:

I, _____(the "Participant"), hereby irrevocably exercise the right to purchase ___shares of the Common Stock, $0.001 par value per share (the "Shares"), of Carisma Therapeutics Inc. (the "Company") at $___per share pursuant to the Company's Amended and Restated 2014 Stock Incentive Plan and a stock option agreement with the Company dated ___(the "Option Agreement"). Enclosed herewith is a payment of $_____, the aggregate purchase price for the Shares. The certificate for the Shares should be registered in my name as it appears below or, if so indicated below, jointly in my name and the name of the person designated below, with right of survivorship.

Dated: _____

_____
Signature
Print Name:

Address:

_____
_____

Name and address of persons in whose name the Shares are to be jointly registered (if applicable):

_____

Exhibit 10.15

Carisma Therapeutics Inc.
RESTRICTED STOCK UNIT AGREEMENT

Granted under the Amended and Restated 2014 Stock Incentive Plan

Carisma Therapeutics Inc. (the "Company") hereby grants the following restricted stock units pursuant to its Amended and Restated 2014 Stock Incentive Plan. The terms and conditions attached hereto are also a part hereof and incorporated herein by reference.

Notice of Grant

Name of recipient (the "Participant"):	
Grant Date:	
Number of restricted stock units ("RSUs") granted:	
Vesting Start Date:	

Vesting Schedule:

Vesting Date:	Number of RSUs that Vest:
All vesting is dependent on the Participant remaining an Eligible Participant, as provided herein.	

This grant of RSUs satisfies in full all commitments that the Company has to the Participant with respect to the issuance of stock, stock options or other equity securities.

Signature of Participant

Street Address

City/State/Zip Code

Carisma Therapeutics Inc.

By: _____
Name of Officer
Title:

Carisma Therapeutics Inc.

Restricted Stock Unit Agreement
Incorporated Terms and Conditions

For valuable consideration, receipt of which is acknowledged, the parties hereto agree as follows:

1. Award of Restricted Stock Units.

In consideration of services rendered and to be rendered to the Company by the Participant, the Company has granted to the Participant, subject to the terms and conditions set forth in this Restricted Stock Unit Agreement (this "Agreement") and in the Company's Amended and Restated 2014 Stock Incentive Plan (the "Plan"), an award with respect to the number of restricted stock units (the "RSUs") set forth in the Notice of Grant that forms part of this Agreement (the "Notice of Grant"). Each RSU represents the right to receive one share of common stock, $0.001 par value per share, of the Company (the "Common Stock") upon vesting of the RSU, subject to the terms and conditions set forth herein.

2. Vesting.

The RSUs shall vest in accordance with the Vesting Schedule set forth in the Notice of Grant (the "Vesting Schedule"). Any fractional shares resulting from the application of any percentages used in the Vesting Schedule shall be rounded down to the nearest whole number of RSUs. Upon the vesting of the RSU, the Company will deliver to the Participant (or the Participant's Designated Beneficiary, if applicable), for each RSU that becomes vested, one share of Common Stock, subject to the payment of any taxes pursuant to Section 7. The Common Stock will be delivered to the Participant (or the Participant's Designated Beneficiary, if applicable) as soon as practicable following each vesting date, but in any event within 30 days of such date.

3. Forfeiture of Unvested RSUs Upon Cessation of Service.

In the event that the Participant ceases to be an employee, director or officer of, or consultant or advisor to, the Company or any other entity the employees, officers, directors, consultants, or advisors of which are eligible to receive awards under the Plan (an "Eligible Participant") for any reason or no reason, with or without cause, all of the RSUs that are unvested as of the time of such cessation shall be forfeited immediately and automatically to the Company, without the payment of any consideration to the Participant, effective as of such cessation. The Participant shall have no further rights with respect to the unvested RSUs or any Common Stock that may have been issuable with respect thereto. If the Participant provides services to a subsidiary of the Company, any references in this Agreement to provision of services to the Company shall instead be deemed to refer to service with such subsidiary.

4. Restrictions on Transfer.

The Participant shall not sell, assign, transfer, pledge, hypothecate, encumber or otherwise dispose of, by operation of law or otherwise (collectively "transfer") any RSUs, or any interest therein. The Company shall not be required to treat as the owner of any RSUs or issue any Common Stock to any transferee to whom such RSUs have been transferred in violation of any of the provisions of this Agreement.

5. Rights as a Stockholder.

The Participant shall have no rights as a stockholder of the Company with respect to any shares of Common Stock that may be issuable with respect to the RSUs until the issuance of the shares of Common Stock to the Participant following the vesting of the RSUs.

6. Provisions of the Plan.

This Agreement is subject to the provisions of the Plan, a copy of which is furnished to the Participant with this Agreement.

7. Tax Matters.

(a) Acknowledgments; No Section 83(b) Election. The Participant acknowledges that he or she is responsible for obtaining the advice of the Participant's own tax advisors with respect to the award of RSUs and the Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents with respect to the tax consequences relating to the RSUs. The Participant understands that the Participant (and not the Company) shall be responsible for the Participant's tax liability that may arise in connection with the acquisition, vesting and/or disposition of the RSUs. The Participant acknowledges that no election under Section 83(b) of the Internal Revenue Code of 1986, as amended (the "Code"), is available with respect to RSUs.

(b) Withholding. The Participant acknowledges and agrees that the Company has the right to deduct from payments of any kind otherwise due to the Participant any federal, state, local or other taxes of any kind required by law to be withheld with respect to the vesting of the RSUs. To the extent the Participant has not previously executed and delivered to the Company effective durable sell-to-cover instructions that by their terms would cover any taxes required by law to be withheld with respect to the vesting of the RSUs, at such time as the Participant is not aware of any material nonpublic information about the Company or the Common Stock and is not prohibited from doing so by the Company's insider trading policy or otherwise, the Participant shall execute the instructions set forth in Schedule A attached hereto (the "Durable Automatic Sell-to-Cover Instruction") as the means of satisfying such tax obligation. If the Participant is required to but does not execute the Durable Automatic Sell-to-Cover Instruction prior to an applicable vesting date, then the Participant agrees that if under applicable law the Participant will owe taxes at such vesting date on the portion of the award then vested the Company shall be entitled to immediate payment from the Participant of the amount of any tax required to be withheld by the Company. The Company shall not deliver any shares of Common Stock to the Participant until it is satisfied that all required withholdings have been made.

8. Miscellaneous.

(a) No Right to Continued Service. The Participant acknowledges and agrees that, notwithstanding the fact that the vesting of the RSUs is contingent upon his or her continued service to the Company, this Agreement does not constitute an express or implied promise of continued service relationship with the Participant or confer upon the Participant any rights with respect to a continued service relationship with the Company or any affiliate of the Company.

(b) Section 409A. The RSUs awarded pursuant to this Agreement are intended to be exempt from or comply with the requirements of Section 409A of the Code and the Treasury Regulations issued thereunder ("Section 409A"). The delivery of shares of Common Stock on the vesting of the RSUs may not be accelerated or deferred unless permitted or required by Section 409A.

(c) Participant's Acknowledgments. The Participant acknowledges that he or she: (i) has read this Agreement; (ii) has been represented in the preparation, negotiation and execution of this Agreement by legal counsel of the Participant's own choice or has voluntarily declined to seek such counsel; (iii) understands the terms and consequences of this Agreement; (iv) is agreeing, in accepting this award, to be bound by any clawback policy that the Company has in place or may adopt in the future; and (iv) is fully aware of the legal and binding effect of this Agreement.

(d) Governing Law. This Agreement shall be construed, interpreted and enforced in accordance with the internal laws of the State of Delaware without regard to any applicable conflicts of laws provisions.

Schedule A

DURABLE AUTOMATIC SELL-TO-COVER INSTRUCTION

This Durable Automatic Sell-to-Cover Instruction (this "Instruction"), which is being delivered to Carisma Therapeutics Inc. (the "Company") by the undersigned on the date set forth below (the "Adoption Date"), relates to the Covered RSUs (as defined following my signature below). This Instruction provides for "eligible sell-to-cover transactions" (as described in Rule 10b5-1(c)(1)(ii)(D)(3) under the Securities Exchange Act of 1934 (the "Exchange Act")) and is intended to satisfy the affirmative defense conditions of Rule 10b5-1(c)(1) under the Exchange Act.

I acknowledge that upon vesting and settlement of any Covered RSUs in accordance with the applicable RSU's terms, whether vesting is based on the passage of time or the achievement of performance goals, I will have compensation income equal to the fair market value of the shares of the Company's common stock subject to the RSUs that are settled on such settlement date and that the Company is required to withhold income and employment taxes in respect of that compensation income.

I desire to establish a plan and process to satisfy such withholding obligation in respect of all Covered RSUs through an automatic sale of the number of the shares of the Company's common stock that would otherwise be issuable to me on each applicable settlement date in an amount sufficient to satisfy the applicable withholding obligation, with the proceeds of the sale delivered to the Company in satisfaction of the applicable withholding obligation.

I understand that the Company has arranged for the administration and execution of its equity incentive programs and the sale of securities by participants thereunder pursuant to a platform administered by a third party (the "Administrator") and the Administrator's designated brokerage partner.

Upon the settlement of any of my Covered RSUs after the 30th day following the Adoption Date (or if I am an officer of the Company on the Adoption Date, after the [120th day following the Adoption Date]) (the "Cooling-Off Period"), I hereby appoint the Administrator (or any successor administrator) to automatically sell such number of shares of the Company's common stock issuable with respect to such RSUs that vested and settled as is sufficient to generate net proceeds sufficient to satisfy the Company's minimum statutory withholding obligations with respect to the income recognized by me in connection with the vesting and settlement of such RSUs (based on minimum statutory withholding rates for all tax purposes, including payroll and social security taxes, that are applicable to such income), and the Company shall receive such net proceeds in satisfaction of such tax withholding obligation.

I hereby appoint the [President and Chief Executive Officer and Secretary of the Company], and any of them acting alone and with full power of substitution, to serve as my attorneys-in-fact to arrange for the sale of shares of the Company's common stock in accordance with this Instruction. I agree to execute and deliver such documents, instruments and certificates as may reasonably be required in connection with the sale of the shares of common stock pursuant to this Instruction.

Unless the third and final box in the definition of Covered RSUs below is checked, if I have previously adopted an automatic sale or sell-to-cover instruction relating to Covered RSUs, this Instruction shall be void *ab initio*.

I hereby certify that, as of the Adoption Date:

(i) I am not prohibited from entering into this Instruction by the Company's insider trading policy or otherwise;

(ii) I am not aware of any material nonpublic information about the Company or its common stock; and

(iii) I am adopting this Instruction in good faith and not as part of a plan or scheme to evade the prohibitions of Rule 10b-5 under the Exchange Act.

_____

Print Name: _____

Date: _____

Covered RSUs:

The following restricted stock units ("RSUs") are covered by this Instruction.

Check all applicable boxes:

☐ The first award of RSUs granted to me on or after _____ [*insert date of grant of current RSUs the grant of which is triggering the execution of this Instruction; if instruction is being executed in advance of a grant of RSUs, insert the Adoption Date*] and any RSUs that may, from time to time following such date, be granted to me by the Company, other than any future granted RSUs which by the terms of the applicable award agreement require the Company to withhold shares for tax withholding obligations in connection with the vesting and settlement of such RSUs, and therefore do not permit sell-to-cover transactions.

☐ Any outstanding RSUs that were granted to me by the Company prior to the Adoption Date that (1) are <u>not</u> subject to any prior automatic sale or sell-to-cover instruction and (2) for which the next vesting date is after the Cooling-Off Period, other than any previously granted RSUs which by the terms of the applicable award agreement require the Company to withhold shares for tax withholding obligations in connection with the vesting and settlement of such RSUs, and therefore do not permit sell-to-cover transactions.

☐ With respect to any RSUs, whether or not granted to me by the Company prior to the Adoption Date, that already are subject to an automatic sale or sell-to-cover instruction (a "Prior Instruction"), I elect to have such sales effected pursuant to this Instruction and confirm that doing so does not modify or change the amount, price, or timing of such sales from those provided by the Prior Instruction (and, as a result the Cooling-Off Period is not applicable to sales pursuant to this Instruction that were previously subject to the Prior Instruction).

Exhibit 10.16

CARISMA THERAPEUTICS INC.

AMENDED AND RESTATED 2014 EMPLOYEE STOCK PURCHASE PLAN

The purpose of this Amended and Restated 2014 Employee Stock Purchase Plan (this "Plan") is to provide eligible employees of Carisma Therapeutics Inc. (formerly known as Sesen Bio, Inc.) (the "Company") and certain of its subsidiaries with opportunities to purchase shares of the Company's common stock, $0.001 par value (the "Common Stock"), commencing at such time as the Board of Directors of the Company (the "Board") shall determine. Subject to adjustment under Section 15 hereof, the number of shares of Common Stock that have been approved for this purpose is 328,432 shares of Common Stock. The Plan amends and restates the 2014 Employee Stock Purchase Plan (the "Original Plan") that was originally adopted by the Board on December 19, 2013 and approved by the Company's stockholders on January 14, 2014, was amended by the Board on March 12, 2021 and approved by the Company's stockholders on May 3, 2021, and was amended by the Board on November 17, 2022 and approved by the Company's stockholders on March 2, 2023.

This Plan is intended to qualify as an "employee stock purchase plan" as defined in Section 423 of the Internal Revenue Code of 1986, as amended (the "Code"), and the regulations issued thereunder, and shall be interpreted consistent therewith.

1. Administration. The Plan will be administered by the Board or by a Committee appointed by the Board (the "Committee"). The Board or the Committee has authority to make rules and regulations for the administration of the Plan and its interpretation and decisions with regard thereto shall be final and conclusive.

2. Eligibility. All employees of the Company and all employees of any subsidiary of the Company (as defined in Section 424(f) of the Code) designated by the Board or the Committee from time to time (a "Designated Subsidiary"), are eligible to participate in any one or more of the offerings of Options (as defined in Section 9) to purchase Common Stock under the Plan provided that:

(a) they are customarily employed by the Company or a Designated Subsidiary for more than 20 hours a week and for more than five months in a calendar year;

(b) they have been employed by the Company or a Designated Subsidiary for at least six (6) months prior to enrolling in the Plan; and

(c) they are employees of the Company or a Designated Subsidiary on the first day of the applicable Plan Period (as defined below).

No employee may be granted an Option hereunder if such employee, immediately after the Option is granted, owns 5% or more of the total combined voting power or value of the stock of the Company or any subsidiary. For purposes of the preceding sentence, the attribution rules of Section 424(d) of the Code shall apply in determining the stock ownership of an employee, and all stock that the employee has a contractual right to purchase shall be treated as stock owned by the employee.

The Company retains the discretion to determine which eligible employees may participate in an offering pursuant to and consistent with Treasury Regulation Sections 1.423-2(e) and (f).

3. Offerings. The Company will make one or more offerings ("Offerings") to employees to purchase stock under this Plan. Offerings will begin at such time as the Board shall determine. Each Offering will consist of a six-month period (a "Plan Period") during which payroll deductions will be made and held for the purchase of Common Stock at the end of the Plan Period. The Board or the Committee may, at its discretion, choose a different Plan Period of not more than twelve (12) months for Offerings.

4. Participation. An employee eligible on the first day of a Plan Period of any Offering may participate in such Offering by completing and forwarding either a written or electronic payroll deduction authorization form to the employee's appropriate payroll office at least 15 days prior to the commencement of the applicable Plan Period. The form will authorize a regular payroll deduction from the Compensation received by the employee during the Plan Period. Unless an employee files a new form or withdraws from the Plan, his or her deductions and purchases will continue at the same rate for future Offerings under the Plan as long as the Plan remains in effect. The term "Compensation" means the amount of money reportable on the employee's Federal Income Tax Withholding Statement, excluding overtime, shift premium, incentive or bonus awards, allowances and reimbursements for expenses such as relocation allowances for travel expenses, income or gains associated with the grant or vesting of restricted stock, income or gains on the exercise of Company stock options or stock appreciation rights, and similar items, whether or not shown or separately identified on the employee's Federal Income Tax Withholding Statement, but including, in the case of salespersons, sales commissions to the extent determined by the Board or the Committee.

5. Deductions. The Company will maintain payroll deduction accounts for all participating employees. With respect to any Offering made under this Plan, an employee may authorize a payroll deduction in any percentage amount (in whole percentages) up to a maximum of 15% of the Compensation he or she receives during the Plan Period or such shorter period during which deductions from payroll are made. The Board or the Committee may, at its discretion, designate a lower maximum contribution rate. The minimum payroll deduction is such percentage of Compensation as may be established from time to time by the Board or the Committee.

6. Deduction Changes. An employee may decrease or discontinue his or her payroll deduction once during any Plan Period, by filing either a written or electronic new payroll deduction authorization form. However, an employee may not increase his or her payroll deduction during a Plan Period. If an employee elects to discontinue his or her payroll deductions during a Plan Period, but does not elect to withdraw his or her funds pursuant to Section 8 hereof, funds deducted prior to his or her election to discontinue will be applied to the purchase of Common Stock on the Exercise Date (as defined below).

7. Interest. Interest will not be paid on any employee accounts, except to the extent that the Board or the Committee, in its sole discretion, elects to credit employee accounts with interest at such rate as it may from time to time determine.

8. Withdrawal of Funds. An employee may at any time prior to the close of business on the fifteenth business day prior to the end of a Plan Period and for any reason permanently draw out the balance accumulated in the employee's account and thereby withdraw from participation in an Offering. Partial withdrawals are not permitted. The employee may not begin participation again during the remainder of the Plan Period during which the employee withdrew his or her balance. The employee may participate in any subsequent Offering in accordance with terms and conditions established by the Board or the Committee.

9. Purchase of Shares.

(a) Number of Shares. On the first day of each Plan Period, the Company will grant to each eligible employee who is then a participant in the Plan an option (an "Option") to purchase on the last business day of such Plan Period (the "Exercise Date") at the applicable purchase price (the "Option Price") up to that number of shares of Common Stock determined by multiplying $2,083 by the number of full months in the Plan Period and dividing the result by the closing price (as determined below) on the first day of such Plan Period; provided, however, that no employee may be granted an Option which permits his or her rights to purchase Common Stock under this Plan and any other employee stock purchase plan (as defined in Section 423(b) of the Code) of the Company and its subsidiaries, to accrue at a rate which exceeds $25,000 of the fair market value of such Common Stock (determined at the date such Option is granted) for each calendar year in which the Option is outstanding at any time; and, provided, further, however, that the Committee may, in its discretion, set a fixed maximum number of shares of Common Stock that each eligible employee may purchase per Plan Period which number may not be greater than the number of shares of Common Stock determined by using the formula in the first clause of this Section 9(a) and which number shall be subject to the second clause of this Section 9(a).

(b) Option Price. The Board or the Committee shall determine the Option Price for each Plan Period, including whether such Option Price shall be determined based on the lesser of the closing price of the Common Stock on (i) the first business day of the Plan Period or (ii) the Exercise Date, or shall be based solely on the closing price of the Common Stock on the Exercise Date; provided, however, that such Option Price shall be at least 85% of the applicable closing price. In the absence of a determination by the Board or the Committee, the Option Price will be 85% of the lesser of the closing price of the Common Stock on (i) the first business day of the Plan Period or (ii) the Exercise Date. The closing price shall be (a) the closing price (for the primary trading session) on any national securities exchange on which the Common Stock is listed or (b) the average of the closing bid and asked prices in the over-the-counter-market, whichever is applicable, as published in The Wall Street Journal or another source selected by the Board or the Committee. If no sales of Common Stock were made on such a day, the price of the Common Stock shall be the reported price for the next preceding day on which sales were made.

(c) Exercise of Option. Each employee who continues to be a participant in the Plan on the Exercise Date shall be deemed to have exercised his Option at the Option Price on such date and shall be deemed to have purchased from the Company the number of whole shares of Common Stock reserved for the purpose of the Plan that his accumulated payroll deductions on such date will pay for, but not in excess of the maximum numbers determined in the manner set forth above.

(d) Return of Unused Payroll Deductions. Any balance remaining in an employee's payroll deduction account at the end of a Plan Period will be automatically refunded to the employee, except that any balance that is less than the purchase price of one share of Common Stock will be carried forward into the employee's payroll deduction account for the following Offering, unless the employee elects not to participate in the following Offering under the Plan, in which case the balance in the employee's account shall be refunded.

10. Issuance of Certificates. Certificates representing shares of Common Stock purchased under the Plan may be issued only in the name of the employee, in the name of the employee and another person of legal age as joint tenants with rights of survivorship, or (in the Company's sole discretion) in the name of a brokerage firm, bank, or other nominee holder designated by the employee. The Company may, in its sole discretion and in compliance with applicable laws, authorize the use of book entry registration of shares in lieu of issuing stock certificates.

11. Rights on Retirement, Death or Termination of Employment. If a participating employee's employment ends before the last business day of a Plan Period, no payroll deduction shall be taken from any pay then due and owing to the employee and the balance in the employee's account shall be paid to the employee. In the event of the employee's death before the last business day of a Plan Period, the Company shall, upon notification of such death, pay the balance of the employee's account (a) to the executor or administrator of the employee's estate or (b) if no such executor or administrator has been appointed to the knowledge of the Company, to such other person(s) as the Company may, in its discretion, designate. If, before the last business day of the Plan Period, the Designated Subsidiary by which an employee is employed ceases to be a subsidiary of the Company, or if the employee is transferred to a subsidiary of the Company that is not a Designated Subsidiary, the employee shall be deemed to have terminated employment for the purposes of this Plan.

12. Optionees Not Stockholders. Neither the granting of an Option to an employee nor the deductions from his or her pay shall make such employee a stockholder of the shares of Common Stock covered by an Option under this Plan until he or she has purchased and received such shares.

13. Options Not Transferable. Options under this Plan are not transferable by a participating employee other than by will or the laws of descent and distribution, and are exercisable during the employee's lifetime only by the employee.

14. Application of Funds. All funds received or held by the Company under this Plan may be combined with other corporate funds and may be used for any corporate purpose.

15. Adjustment for Changes in Common Stock and Certain Other Events.

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under this Plan, (ii) the share limitations set forth in Section 9, and (iii) the Option Price shall be equitably adjusted to the extent determined by the Board or the Committee.

(b) Reorganization Events.

(1) Definition. A "Reorganization Event" shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (b) any transfer or disposition of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange or other transaction or (c) any liquidation or dissolution of the Company.

(2) Consequences of a Reorganization Event on Options. In connection with a Reorganization Event, the Board or the Committee may take any one or more of the following actions as to outstanding Options on such terms as the Board or the Committee determines: (i) provide that Options shall be assumed, or substantially equivalent Options shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (ii) upon written notice to employees, provide that all outstanding Options will be terminated immediately prior to the consummation of such Reorganization Event and that all such outstanding Options will become exercisable to the extent of accumulated payroll deductions as of a date specified by the Board or the Committee in such notice, which date shall not be less than 10 days preceding the effective date of the Reorganization Event, (iii) upon written notice to employees, provide that all outstanding Options will be cancelled as of a date prior to the effective date of the Reorganization Event and that all accumulated payroll deductions will be returned to participating employees on such date, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the "Acquisition Price"), change the last day of the Plan Period to be the date of the consummation of the Reorganization Event and make or provide for a cash payment to each employee equal to (A) (1) the Acquisition Price times (2) the number of shares of Common Stock that the employee's accumulated payroll deductions as of immediately prior to the Reorganization Event could purchase at the Option Price, where the Acquisition Price is treated as the fair market value of the Common Stock on the last day of the applicable Plan Period for purposes of determining the Option Price under Section 9(b) hereof, and where the number of shares that could be purchased is subject to the limitations set forth in Section 9(a), minus (B) the result of multiplying such number of shares by such Option Price, (v) provide that, in connection with a liquidation or dissolution of the Company, Options shall convert into the right to receive liquidation proceeds (net of the Option Price thereof) and (vi) any combination of the foregoing.

For purposes of clause (i) above, an Option shall be considered assumed if, following consummation of the Reorganization Event, the Option confers the right to purchase, for each share of Common Stock subject to the Option immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); provided, however, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise of Options to consist solely of such number of shares of common stock of the acquiring or succeeding corporation (or an affiliate thereof) that the Board determines to be equivalent in value (as of the date of such determination or another date specified by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

16. Amendment of the Plan. The Board may at any time, and from time to time, amend or suspend this Plan or any portion thereof, except that (a) if the approval of any such amendment by the shareholders of the Company is required by Section 423 of the Code, such amendment shall not be effected without such approval, and (b) in no event may any amendment be made that would cause the Plan to fail to comply with Section 423 of the Code.

17. Insufficient Shares. If the total number of shares of Common Stock specified in elections to be purchased under any Offering plus the number of shares purchased under previous Offerings under this Plan exceeds the maximum number of shares issuable under this Plan, the Board or the Committee will allot the shares then available on a pro-rata basis.

18. Termination of the Plan. This Plan may be terminated at any time by the Board. Upon termination of this Plan all amounts in the accounts of participating employees shall be promptly refunded.

19. Governmental Regulations. The Company's obligation to sell and deliver Common Stock under this Plan is subject to listing on a national stock exchange (to the extent the Common Stock is then so listed or quoted) and the approval of all governmental authorities required in connection with the authorization, issuance or sale of such stock.

20. Governing Law. The Plan shall be governed by Delaware law except to the extent that such law is preempted by federal law.

21. Issuance of Shares. Shares may be issued upon exercise of an Option from authorized but unissued Common Stock, from shares held in the treasury of the Company, or from any other proper source.

22. Notification upon Sale of Shares. Each employee agrees, by entering the Plan, to promptly give the Company notice of any disposition of shares purchased under the Plan where such disposition occurs within two years after the date of grant of the Option pursuant to which such shares were purchased.

23. Grants to Employees in Foreign Jurisdictions. The Company may, to comply with the laws of a foreign jurisdiction, grant Options to employees of the Company or a Designated Subsidiary who are citizens or residents of such foreign jurisdiction (without regard to whether they are also citizens of the United States or resident aliens (within the meaning of Section 7701(b)(1)(A) of the Code)) with terms that are less favorable (but not more favorable) than the terms of Options granted under the Plan to employees of the Company or a Designated Subsidiary who are resident in the United States. Notwithstanding the preceding provisions of this Plan, employees of the Company or a Designated Subsidiary who are citizens or residents of a foreign jurisdiction (without regard to whether they are also citizens of the United States or resident aliens (within the meaning of Section 7701(b)(1)(A) of the Code)) may be excluded from eligibility under the Plan if (a) the grant of an Option under the Plan to a citizen or resident of the foreign jurisdiction is prohibited under the laws of such jurisdiction or (b) compliance with the laws of the foreign jurisdiction would cause the Plan to violate the requirements of Section 423 of the Code. The Company may add one or more appendices to this Plan describing the operation of the Plan in those foreign jurisdictions in which employees are excluded from participation or granted less favorable Options.

24. Authorization of Sub-Plans. The Board may from time to time establish one or more sub-plans under the Plan with respect to one or more Designated Subsidiaries, provided that such sub-plan complies with Section 423 of the Code.

25. Withholding. If applicable tax laws impose a tax withholding obligation, each affected employee shall, no later than the date of the event creating the tax liability, make provision satisfactory to the Board for payment of any taxes required by law to be withheld in connection with any transaction related to Options granted to or shares acquired by such employee pursuant to the Plan. The Company may, to the extent permitted by law, deduct any such taxes from any payment of any kind otherwise due to an employee.

26. Effective Date and Approval of Shareholders. The Original Plan took effect on December 19, 2013 subject to approval by the shareholders of the Company as required by Section 423 of the Code, which approval occurred on January 14, 2014. The first amendment to the Original Plan took effect on May 3, 2021. The second amendment to the Original Plan took effect as of the effective time of the merger contemplated by the Agreement and Plan of Merger and Reorganization, dated as of September 20, 2022, by and between the Company, Seahawk Merger Sub Inc. and Carisma Therapeutics Inc.

Exhibit 14.1

CARISMA THERAPEUTICS INC.

CODE OF BUSINESS CONDUCT AND ETHICS

This Code of Business Conduct and Ethics (the "Code") sets forth legal and ethical standards of conduct for employees, officers and directors of Carisma Therapeutics Inc. (the "Company"). This Code is intended to deter wrongdoing and to promote the conduct of all Company business in accordance with high standards of integrity and in compliance with all applicable laws and regulations. Except as otherwise required by applicable local law, this Code applies to the Company and all of its subsidiaries and other business entities controlled by it worldwide.

If you have any questions regarding this Code or its application to you in any situation, you should contact your supervisor or the Company's General Counsel or the Principal Financial Officer.

Compliance with Laws, Rules and Regulations

The Company requires that all employees, officers and directors comply with all laws, rules and regulations applicable to the Company wherever it does business. You are expected to use good judgment and common sense in seeking to comply with all applicable laws, rules and regulations and to ask for advice when you are uncertain about them.

If you become aware of the violation of any law, rule or regulation by the Company, whether by its employees, officers, directors, or any third party doing business on behalf of the Company, it is your responsibility to promptly report the matter to your supervisor or to the General Counsel or the Principal Financial Officer. While it is the Company's desire to address matters internally, nothing in this Code prohibits you from reporting any illegal activity, including any violation of the securities laws, antitrust laws, environmental laws or any other federal, state or foreign law, rule or regulation, to the appropriate regulatory authority. Employees, officers and directors shall not discharge, demote, suspend, threaten, harass or in any other manner discriminate or retaliate against an employee because he or she reports any such violation. However, if the report was made with knowledge that it was false, the Company may take appropriate disciplinary action up to and including termination. This Code should not be construed to prohibit you from engaging in concerted activity protected by the rules and regulations of the National Labor Relations Board or from testifying, participating or otherwise assisting in any state or federal administrative, judicial or legislative proceeding or investigation.

Compliance with Company Policies

Every employee, officer and director is expected to comply with all Company policies and rules as in effect from time to time. You are expected to familiarize yourself with such policies.

Conflicts of Interest

Employees, officers and directors must refrain from engaging in any activity or having a personal interest that presents a "conflict of interest" and should seek to avoid even the appearance of a conflict of interest. A conflict of interest occurs when your personal interest interferes with the business interests of the Company. A conflict of interest can arise whenever you, as an employee, officer or director, take action or have an interest that prevents you from performing your Company duties and responsibilities honestly, objectively and effectively.

For example:

- No employee, officer or director shall perform services as an employee, officer, director, consultant, advisor or in any other capacity for a competitor of the Company, other than services performed at the request of the Company;

- No employee, officer or director shall have a financial interest in a competitor of the Company, other than a financial interest representing less than one percent (1%) of the outstanding shares of a publicly-held company; and

- No employee, officer or director shall use his or her position with the Company to influence a transaction with a supplier or customer in which such person has any personal interest, other than a financial interest representing less than one percent (1%) of the outstanding shares of a publicly-held company.

It is your responsibility to disclose any material transaction or relationship that reasonably could be expected to give rise to a conflict of interest to the General Counsel or the Principal Financial Officer or, if you are an executive officer or director, to the Board of Directors, who shall be responsible for determining whether such transaction or relationship constitutes a conflict of interest.

Insider Trading

Employees, officers and directors who have material non-public information about the Company or other companies, including our suppliers and customers, as a result of their relationship with the Company are prohibited by law and Company policy from trading in securities of the Company or such other companies, as well as from communicating such information to others who might trade on the basis of that information. To help ensure that you do not engage in prohibited insider trading and avoid even the appearance of an improper transaction, the Company has adopted an Insider Trading Policy, which is available from the General Counsel or the Principal Financial Officer.

If you are uncertain about the constraints on your purchase or sale of any Company securities or the securities of any other company that you are familiar with by virtue of your relationship with the Company, you should consult with the General Counsel or the Principal Financial Officer before making any such purchase or sale.

Confidentiality

All information and know-how, whether or not in writing, of a private, secret or confidential nature concerning the Company's business or financial affairs (collectively, "Proprietary Information") is and shall be the exclusive property of the Company. By way of illustration, but not limitation, Proprietary Information may include discoveries, inventions, products, product improvements, product enhancements, processes, methods, techniques, formulas, compositions, compounds, negotiation strategies and positions, projects, developments, plans (including business and marketing plans), research data, clinical data, financial data (including sales costs, profits, pricing methods), computer programs (including software used pursuant to a license agreement), customer, prospect and supplier lists, and contacts at or knowledge of customers or prospective customers of the Company.

Employees, officers and directors must maintain the confidentiality of Proprietary Information entrusted to them by the Company or other companies, including our suppliers and customers, except when disclosure is authorized by a supervisor or legally permitted in connection with reporting illegal activity to the appropriate regulatory authority. Unauthorized disclosure of any Proprietary Information is prohibited. Additionally, employees should take appropriate precautions to ensure that confidential or sensitive business information, whether it is proprietary to the Company or another company, is not communicated within the Company except to employees who have a need to know such information to perform their responsibilities for the Company.

Third parties may ask you for information concerning the Company. Subject to the exceptions noted in the preceding paragraph, employees, officers and directors (other than the Company's authorized spokespersons) must not discuss Proprietary Information with, or disseminate Proprietary Information to, anyone outside the Company, except as required in the performance of their Company duties and, if appropriate, after a confidentiality agreement is in place. This prohibition applies particularly to inquiries concerning the Company from the media, market professionals (such as securities analysts, institutional investors, investment advisers, brokers and dealers) and security holders. All responses to inquiries on behalf of the Company must be made only by the Company's authorized spokespersons. If you receive any inquiries of this nature, you must decline to comment and refer the inquirer to your supervisor or one of the Company's authorized spokespersons. The Company's policies with respect to public disclosure of internal matters are described more fully in the Company's Disclosure Policy, which is available from the Company's General Counsel or Principal Financial Officer.

You also must abide by any lawful obligations that you have to your former employer. These obligations may include restrictions on the use and disclosure of Proprietary Information, restrictions on the solicitation of former colleagues to work at the Company and non-competition obligations.

Honest and Ethical Conduct and Fair Dealing

Employees, officers and directors should endeavor to deal honestly, ethically and fairly with the Company's suppliers, customers, competitors and employees. Statements regarding the Company's products and services must not be untrue, misleading, deceptive or fraudulent. You must not take unfair advantage of anyone through manipulation, concealment, abuse of privileged information, misrepresentation of material facts or any other unfair-dealing practice.

Protection and Proper Use of Corporate Assets

Employees, officers and directors should seek to protect the Company's assets, including Proprietary Information. Theft, carelessness and waste have a direct impact on the Company's financial performance. Employees, officers and directors must use the Company's assets and services solely for legitimate business purposes of the Company and not for any personal benefit or the personal benefit of anyone else.

Employees, officers and directors must advance the Company's legitimate interests when the opportunity to do so arises. You must not take for yourself personal opportunities that are discovered through your position with the Company or the use of property or information of the Company.

Gifts and Gratuities

The use of Company funds or assets for gifts, gratuities or other favors to government officials is prohibited, except to the extent such gifts, gratuities or other favors are in compliance with applicable law, insignificant in amount and not given in consideration or expectation of any action by the recipient. The use of Company funds or assets for gifts to any customer, supplier, or other person doing or seeking to do business with the Company is prohibited, except to the extent such gifts are in compliance with the policies of both the Company and the recipient and are in compliance with applicable law.

Employees, officers and directors must not accept, or permit any member of his or her immediate family to accept, any gifts, gratuities or other favors from any customer, supplier or other person doing or seeking to do business with the Company, other than items of insignificant value. Any gifts that are not of insignificant value should be returned immediately and reported to your supervisor. If immediate return is not practical, they should be given to the Company for charitable disposition or such other disposition as the Company, in its sole discretion, believes appropriate.

Common sense and moderation should prevail in business entertainment engaged in on behalf of the Company. Employees, officers and directors should provide, or accept, business entertainment to or from anyone doing business with the Company only if the entertainment is infrequent, modest, intended to serve legitimate business goals and in compliance with applicable law.

Bribes and kickbacks are criminal acts, strictly prohibited by law. You must not offer, give, solicit or receive any form of bribe or kickback anywhere in the world. The Foreign Corrupt Practices Act prohibits giving anything of value, directly or indirectly, to officials of foreign governments or foreign political candidates in order to obtain or retain business.

Accuracy of Books and Records and Public Reports

Employees, officers and directors must honestly and accurately report all business transactions. You are responsible for the accuracy of your records and reports. Accurate information is essential to the Company's ability to meet legal and regulatory obligations.

All Company books, records and accounts shall be maintained in accordance with all applicable regulations and standards and accurately reflect the true nature of the transactions they record. The financial statements of the Company shall conform to generally accepted accounting rules and the Company's accounting policies. No undisclosed or unrecorded account or fund shall be established for any purpose. No false or misleading entries shall be made in the Company's books or records for any reason, and no disbursement of corporate funds or other corporate property shall be made without adequate supporting documentation.

It is the policy of the Company to provide full, fair, accurate, timely and understandable disclosure in reports and documents filed with, or submitted to, the Securities and Exchange Commission ("SEC") and in other public communications.

Concerns Regarding Accounting or Auditing Matters

Employees with concerns regarding questionable accounting or auditing matters or complaints regarding accounting, internal accounting controls or auditing matters may confidentially, and anonymously if they wish, report such concerns through the Secure Web Form at https://www.whistleblowerservices.com/carm. In addition, the Company has established a Secure Hotline, accessible via a toll-free telephone number (866) 822-6485, where you can leave a recorded message to report such concerns. See "Reporting and Compliance Procedures." All such concerns and complaints will be forwarded to the Audit Committee of the Board of Directors (the "Audit Committee"), unless they are determined to be without merit by the General Counsel and/or the Principal Financial Officer. In any event, a record of all complaints and concerns received will be provided to the Audit Committee each fiscal quarter. Any such concerns or complaints may also be communicated, confidentially and, if you desire, anonymously, directly to any member of the Audit Committee of the Board of Directors.

The Audit Committee will evaluate the merits of any concerns or complaints received by it and authorize such follow-up actions, if any, as it deems necessary or appropriate to address the substance of the concern or complaint.

The Company will not discipline, discriminate against or retaliate against any employee who reports a complaint or concern, unless it is determined that the report was made with knowledge that it was false.

Dealings with Independent Auditors

No employee, officer or director shall, directly or indirectly, make or cause to be made a materially false or misleading statement to an accountant in connection with (or omit to state, or cause another person to omit to state, any material fact necessary in order to make statements made, in light of the circumstances under which such statements were made, not misleading to, an accountant in connection with) any audit, review or examination of the Company's financial statements or the preparation or filing of any document or report with the SEC. No employee, officer or director shall, directly or indirectly, take any action to coerce, manipulate, mislead or fraudulently influence any independent public or certified public accountant engaged in the performance of an audit or review of the Company's financial statements.

Waivers of this Code of Business Conduct and Ethics

While some of the policies contained in this Code must be strictly adhered to and no exceptions can be allowed, in other cases exceptions may be appropriate. Any employee or officer who believes that a waiver of any of these policies is appropriate in his or her case should first contact his or her immediate supervisor. If the supervisor agrees that a waiver is appropriate, the approval of the General Counsel or the Principal Financial Officer must be obtained. The General Counsel or the Principal Financial Officer shall be responsible for maintaining a record of all requests by employees or officers for waivers of any of these policies and the disposition of such requests.

Any executive officer or director who seeks a waiver of any of these policies should contact the General Counsel or the Principal Financial Officer. Any waiver of this Code for executive officers or directors or any change to this Code that applies to executive officers or directors may be made only by the Board of Directors of the Company and will be disclosed as required by law or stock exchange regulation.

Reporting and Compliance Procedures

Every employee, officer and director has the responsibility to ask questions, seek guidance, report suspected violations and express concerns regarding compliance with this Code to his or her supervisor or to the General Counsel or the Principal Financial Officer, as described below. Any employee, officer or director who knows or believes that any other employee or representative of the Company has engaged or is engaging in Company-related conduct that violates applicable law or this Code should report such information to his or her supervisor or to the General Counsel or Principal Financial Officer. You may report such conduct openly or anonymously without fear of retaliation. The Company will not discipline, discriminate against or retaliate against any employee who reports such conduct, unless it is determined that the report was made with knowledge that it was false, or who cooperates in any investigation or inquiry regarding such conduct. Any supervisor who receives a report of a violation of this Code must immediately inform the General Counsel or the Principal Financial Officer.

You may report violations of this Code, on a confidential or anonymous basis, through the Secure Web Form at https://www.whistleblowerservices.com/carm. In addition, the Company has established a Secure Hotline, accessible via a toll-free telephone number (866) 822-6485, where you can leave a recorded message about any violation or suspected violation of this Code. While we prefer that you identify yourself when reporting violations so that we may follow up with you, as necessary, for additional information, you may leave messages anonymously if you wish.

If the General Counsel or the Principal Financial Officer receives information regarding an alleged violation of this Code, he or she shall, as appropriate, (a) evaluate such information, (b) if the alleged violation involves an executive officer or a director, inform the Chief Executive Officer and Board of Directors of the alleged violation, (c) determine whether it is necessary to conduct an informal inquiry or a formal investigation and, if so, initiate such inquiry or investigation and (d) report the results of any such inquiry or investigation, together with a recommendation as to disposition of the matter, to the General Counsel or the Principal Financial Officer for action, or if the alleged violation involves an executive officer or a director, report the results of any such inquiry or investigation to the Board of Directors or a committee thereof. Employees, officers and directors are expected to cooperate fully with any inquiry or investigation by the Company regarding an alleged violation of this Code. Failure to cooperate with any such inquiry or investigation may result in disciplinary action, up to and including discharge.

The Company shall determine whether violations of this Code have occurred and, if so, shall determine the disciplinary measures to be taken against any employee who has violated this Code. In the event that the alleged violation involves an executive officer or a director, the Chief Executive Officer and the Board of Directors, respectively, shall determine whether a violation of this Code has occurred and, if so, shall determine the disciplinary measures to be taken against such executive officer or director.

Failure to comply with the standards outlined in this Code will result in disciplinary action including, but not limited to, reprimands, warnings, probation or suspension without pay, demotions, reductions in salary, discharge and restitution. Certain violations of this Code may require the Company to refer the matter to the appropriate governmental or regulatory authorities for investigation or prosecution. Moreover, any supervisor who directs or approves of any conduct in violation of this Code, or who has knowledge of such conduct and does not immediately report it, also will be subject to disciplinary action, up to and including discharge.

Dissemination and Amendment

This Code shall be distributed to each new employee, officer and director of the Company upon commencement of his or her employment or other relationship with the Company and shall also be distributed annually to each employee, officer and director of the Company, and each employee, officer and director shall certify that he or she has received, read and understood the Code and has complied with its terms.

The Company reserves the right to amend, alter or terminate this Code at any time for any reason. The most current version of this Code can be obtained from the Company's General Counsel or Principal Financial Officer.

This document is not an employment contract between the Company and any of its employees, officers or directors.

Certification

I, _____ do hereby certify that:
(Print Name Above)

1. I have received and carefully read the Code of Business Conduct and Ethics of Carisma Therapeutics Inc.

2. I understand the Code of Business Conduct and Ethics.

3. I have complied and will continue to comply with the terms of the Code of Business Conduct and Ethics.

4. Except as noted below, I do not know or believe that any employee or representative of the Company has engaged or is engaging in Company-related conduct that violates applicable law or the Code of Business Conduct and Ethics.

Exceptions (describe, or state "None"):

_____

_____

_____

_____

_____

Date: _____ _____
(Signature)

EACH EMPLOYEE, OFFICER AND DIRECTOR IS REQUIRED TO SIGN, DATE AND RETURN THIS CERTIFICATION TO THE PRINCIPAL FINANCIAL OFFICER. FAILURE TO DO SO MAY RESULT IN DISCIPLINARY ACTION.

SUSPECTED VIOLATIONS SHOULD BE REPORTED TO

(866) 822-6485

Exhibit 16.1

March 7, 2023

Securities and Exchange Commission

100 F Street N.E.

Washington, District of Columbia 20549

Ladies and Gentlemen:

We have read item 4.01 on Form 8-K dated March 7, 2023 of Carisma Therapeutics Inc. (formerly known as Sesen Bio, Inc.) and are in agreement with the statements contained in the paragraphs within section (a) therein. We have no basis to agree or disagree with other statements of the registrant contained therein.

/s/ Ernst & Young LLP

Exhibit 99.1

Carisma Therapeutics Closes Merger with Sesen Bio

Shares of Carisma to commence trading on Nasdaq under new ticker symbol "CARM" on March 8, 2023

Resulting cash position of approximately $140 million provides runway through 2024; expected to enable multiple clinical readouts across Carisma programs

PHILADELPHIA – March 7, 2023 – Carisma Therapeutics Inc., a clinical stage biopharmaceutical company focused on discovering and developing innovative immunotherapies, and Sesen Bio, Inc. ("Sesen Bio"), announced today the closing of their previously announced merger. The combined company will operate under the name Carisma Therapeutics Inc. and shares of its common stock will commence trading under the ticker symbol "CARM" on March 8, 2023 on the Nasdaq Capital Market.

"This merger represents a very exciting opportunity for stockholders of each company, and we believe it gets us one step closer to our goal of revolutionizing the field of immunotherapy," said Steven Kelly, President and Chief Executive Officer of Carisma. "It will provide us with the financial strength to not only continue to develop our lead candidate CT-0508 but also accelerate the growth of our platform and pipeline within and outside of oncology and continue to develop additional strong strategic partnerships."

Dr. Thomas Cannell, President and Chief Executive Officer of Sesen Bio, said, "I want to thank the entire Sesen Bio team for their steadfast commitment to our mission to save and improve lives. Patients, caregivers and investigators around the world have been important advocates of Sesen Bio and I want to thank them for their support. I am confident in the potential of Carisma's promising technology and through the combined company, we can continue to advance our shared mission of saving and improving the lives of patients with cancer. I know the future of Carisma is bright and I am optimistic for their continued success."

Concurrent with the closing of the merger, Carisma completed a $30 million financing from a syndicate of investors, including HealthCap, AbbVie, Wellington Partners, SymBiosis, Penn Medicine, TPG Biotech, MRL Ventures Fund, the therapeutics-focused corporate venture arm of Merck & Co., Agent Capital, Solasta, Livzon, Pictet Alternative Advisors and 4Bio. The projected cash and cash equivalents as of the close of the business combination are expected to be approximately $140 million, providing anticipated operating runway at least through the end of 2024.

In connection with the closing of the merger, a one-time special cash dividend of $75 million, or approximately $0.36 per share, will be paid no later than March 10, 2023 to Sesen Bio stockholders of record at the close of business on March 7, 2023. Under the terms of the merger, Sesen Bio stockholders also received one Contingent Value Right, which entitles the holder to receive a cash payment related to any potential proceeds from the sale of Sesen Bio's legacy assets, including Vicineum, and the potential $30 million milestone payment under the Roche Asset Purchase Agreement.

The combined company will be headquartered in Philadelphia, Pennsylvania, and will be led by Steven Kelly, President and Chief Executive Officer of Carisma. The board of directors of the combined company will be composed of seven members, including Sanford Zweifach (Chair), Regina Hodits, Briggs Morrison, Björn Odlander, Chidozie Ugwumba, Steven Kelly (Carisma President & Chief Executive Officer) and Michael Torok.

“The successful completion of this merger marks an important milestone in Carisma’s journey and significantly strengthens its cash resources to advance the company’s differentiated pipeline and platform,” said Chairman of the Board Sanford Zweifach. “The dedication of the Carisma team, as well as the support and guidance of our advisors and stockholders, have been instrumental in bringing us to this moment. The Board and I look forward to the opportunities that lie ahead."

SVB Securities acted as the exclusive financial advisor to Sesen Bio for the transaction, and Hogan Lovells US LLP served as Sesen Bio’s legal counsel. Evercore served as lead financial advisor to Carisma for the transaction, and BofA Securities, Inc. also served as financial advisor to Carisma for the transaction. Wilmer Cutler Pickering Hale and Dorr LLP is serving as legal counsel to Carisma. BofA Securities, Inc. and Evercore served as co-placement agents for Carisma's concurrent financing and Shearman & Sterling LLP is serving as the placement agents' legal counsel.

About Carisma Therapeutics

Carisma Therapeutics Inc. is a biopharmaceutical company dedicated to developing a differentiated and proprietary cell therapy platform focused on engineered macrophages, cells that play a crucial role in both the innate and adaptive immune response. The first applications of the platform, developed in collaboration with the University of Pennsylvania*, are autologous chimeric antigen receptor (CAR)-macrophages for the treatment of solid tumors. Carisma is headquartered in Philadelphia, PA. For more information, please visit www.carismatx.com *Carisma has licensed certain Penn-owned intellectual property from the University of Pennsylvania, and Penn’s Perelman School of Medicine receives sponsored research and clinical trial funding from Carisma. Penn and certain of its faculty members are current equity holders in Carisma and have received and may be entitled to receive future financial consideration from Carisma from the development and commercialization of products based on licensed Penn intellectual property.

Cautionary Note on Forward-Looking Statements

Any statements in this press release about Carisma's future expectations, plans and prospects, strategy or future operations, and other statements containing the words "anticipate," "believe," "contemplate," "expect," "intend," "may," "plan," "predict," "target," "potential," "possible," "will," "would," "could," "should," "continue," and similar expressions, constitute forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. For example, statements concerning Carisma's business, strategy, future operations, cash runway, the advancement of Carisma's product candidates and product pipeline, and clinical development of Carisma's product candidates, including expectations regarding timing of initiation and results of clinical trials are forward-looking statements. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including without limitation: (i) risks associated with the possible failure to realize certain anticipated benefits of the merger, including with respect to future financial and operating results; (ii) the effect of the completion of the merger on Carisma's business relationships, operating results and business generally; (iii) the outcome of any legal proceedings instituted against Sesen Bio, Carisma or any of their respective directors or officers related to the merger agreement or the transactions contemplated thereby; (iv) the ability of Carisma to protect its intellectual property rights; (v) competitive responses to the merger and changes in expected or existing competition; (vi) the success and timing of regulatory submissions and pre-clinical and clinical trials; (vii) regulatory requirements or developments; (viii) changes to clinical trial designs and regulatory pathways; (ix) changes in capital resource requirements; (x) risks related to the inability of Carisma to obtain sufficient additional capital to continue to advance its product candidates and its preclinical programs; (xi) legislative, regulatory, political and economic developments; and (xii) other factors discussed in the Company's reports filed with the Securities Exchange Commission. In addition, the forward-looking statements included in this press release represent Carisma's views as of the date hereof. Carisma anticipates that subsequent events and developments will cause its views to change. However, while Carisma may elect to update these forward-looking statements at some point in the future, Carisma specifically disclaims any obligation to do so, except as required under applicable law. These forward-looking statements should not be relied upon as representing Carisma's views as of any date subsequent to the date hereof.

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CARISMA BUSINESS

Overview

Carisma Therapeutics Inc., or Carisma, is a clinical stage cell therapy company focused on utilizing Carisma's proprietary macrophage and monocyte cell engineering platform to develop transformative immunotherapies to treat cancer and other serious diseases. Carisma has created a comprehensive cell therapy platform to enable the therapeutic use of engineered macrophages and monocytes, which belong to a subgroup of white blood cells called myeloid cells. Macrophages and monocytes are part of the innate immune system and can detect and degrade harmful substances through a process referred to as phagocytosis, in which the harmful substance is engulfed and destroyed and in turn leads to the activation of a broad immune response.

To harness the powerful immunologic functions of macrophages against cancer, Carisma has developed a proprietary Chimeric Antigen Receptor Macrophage, or CAR-M, platform technology. Chimeric antigen receptors, or CARs, are synthetically engineered receptors that are designed to bestow immune cells with the ability to target specific antigens on the surface of cancer cells. By introducing CARs into macrophage and monocyte cells, Carisma aims to redirect their potent innate immune functions against cancer. Carisma's CAR-M platform technology incorporates proprietary tumor targeting constructs, vectors to deliver CARs to macrophages and monocytes and novel manufacturing processes. Carisma's CAR-M therapeutics are designed to infiltrate the solid tumor microenvironment, kill cancer cells via targeted phagocytosis, and activate other immune cells, such as T-cells, to initiate a robust anti-tumor immune response.

Carisma's lead product candidate CT-0508, the first CAR-M to be evaluated in a human clinical trial, is an *ex vivo* autologous cell therapy product candidate, wherein immune cells from blood drawn from a patient are engineered outside of the body and reinfused into the same patient. CT-0508 is intended to treat solid tumors that overexpress HER2, a protein that is overexpressed on the surface of a variety of solid tumors, including breast cancer, gastric cancer, esophageal cancer, salivary gland cancer, and numerous others. Carisma has completed enrollment of the first group of patients in a Phase 1 clinical trial of CT-0508, with nine patients having been successfully dosed. In November 2022, Carisma presented preliminary clinical results from the first group of patients. CT-0508 was successfully manufactured using macrophages obtained from heavily pre-treated, advanced solid tumor patients and has shown high CAR expression, viability, and purity. In addition, CT-0508 has been generally well-tolerated after infusion with no dose-limiting toxicities reported to date from the nine patients enrolled in the first group. While the results from this early clinical trial data are both preliminary and limited, Carisma believes the results indicate that CT-0508 can be detected within the tumor microenvironment, or TME, lead to remodeling and activation of the TME, and potentially induce anti-tumor adaptive immunity. Carisma anticipates providing multiple clinical data updates over the next 18 months. In the combination setting, Carisma has observed the synergistic potential of CT-0508 with a PD1 blocking T-cell checkpoint inhibitor in pre-clinical models, enabling a combination trial with pembrolizumab. Carisma submitted a clinical protocol amendment to the United States Food and Drug Administration, or FDA, in September 2022 to allow Carisma to treat patients with the co-administration of CT-0508 and pembrolizumab, and opened the study for enrollment in December 2022. The FDA has granted "Fast Track" status to CT-0508 for the treatment of patients with HER2 overexpressing solid tumors and Carisma plans to prioritize development for this indication.

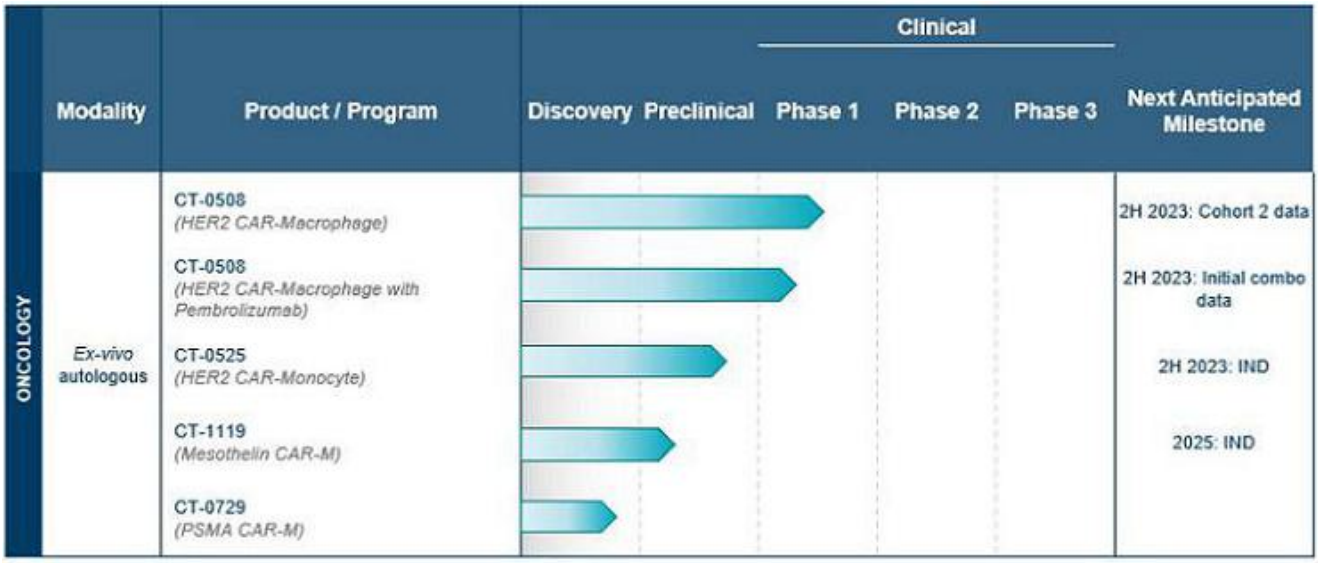
Beyond CT-0508, Carisma has a broad pipeline of cell therapy assets in various stages of pre-clinical development. In addition to the development of *ex vivo* CAR-M cell therapies, Carisma is also developing *in vivo* CAR-M gene therapies, wherein immune cells are directly engineered within the patient's body. To advance its *in vivo* CAR-M therapeutics, Carisma established a strategic collaboration with ModernaTX, Inc., or Moderna, focused on the development and potential commercialization of up to 12 product candidates, of which four have already been nominated. In collaboration with Moderna, Carisma has established an approach that uses Moderna's myeloid cell specific lipid nanoparticle/mRNA, or LNP/mRNA, technology, together with Carisma's CAR-M platform technology, to create novel *in vivo* oncology gene therapies. Carisma believes this approach has the potential to enable a series of off-the-shelf product candidates to target a patient's own myeloid cells against cancer cells directly within their body. As part of the agreement with Moderna, Carisma received a $45.0 million up-front cash payment and an investment by Moderna in the form of a $35.0 million convertible note, in addition to future research funding and the opportunity for milestone payments and royalties.

Through its robust internal discovery engine, Carisma is building upon its platform to enhance and expand the utility of macrophage cell and gene therapies, leading to the creation of multiple product candidates with the potential to treat cancer and other serious diseases. By replacing the targeting domain of the CAR, Carisma can reprogram the target antigen specificity of the CAR-M cell product and develop candidates against a range of cancer indications and therapeutic areas beyond oncology. As a result, Carisma believes the flexibility of its macrophage and monocyte cell engineering platform will allow Carisma to generate new product candidates suitable for clinical development in a cost-efficient manner to expand its pipeline. In addition to acting as a first line of defense in the innate immune system, macrophages are found in all tissues in the body where they serve key regulatory functions such as wound healing, termination of immune responses, and tissue regeneration. Using its macrophage and monocyte *ex vivo* and *in vivo* engineering platform, Carisma is pursuing early research and development of multiple assets for the potential treatment of diseases beyond oncology, including liver fibrosis, neurodegeneration, and other immunologic and inflammatory diseases.

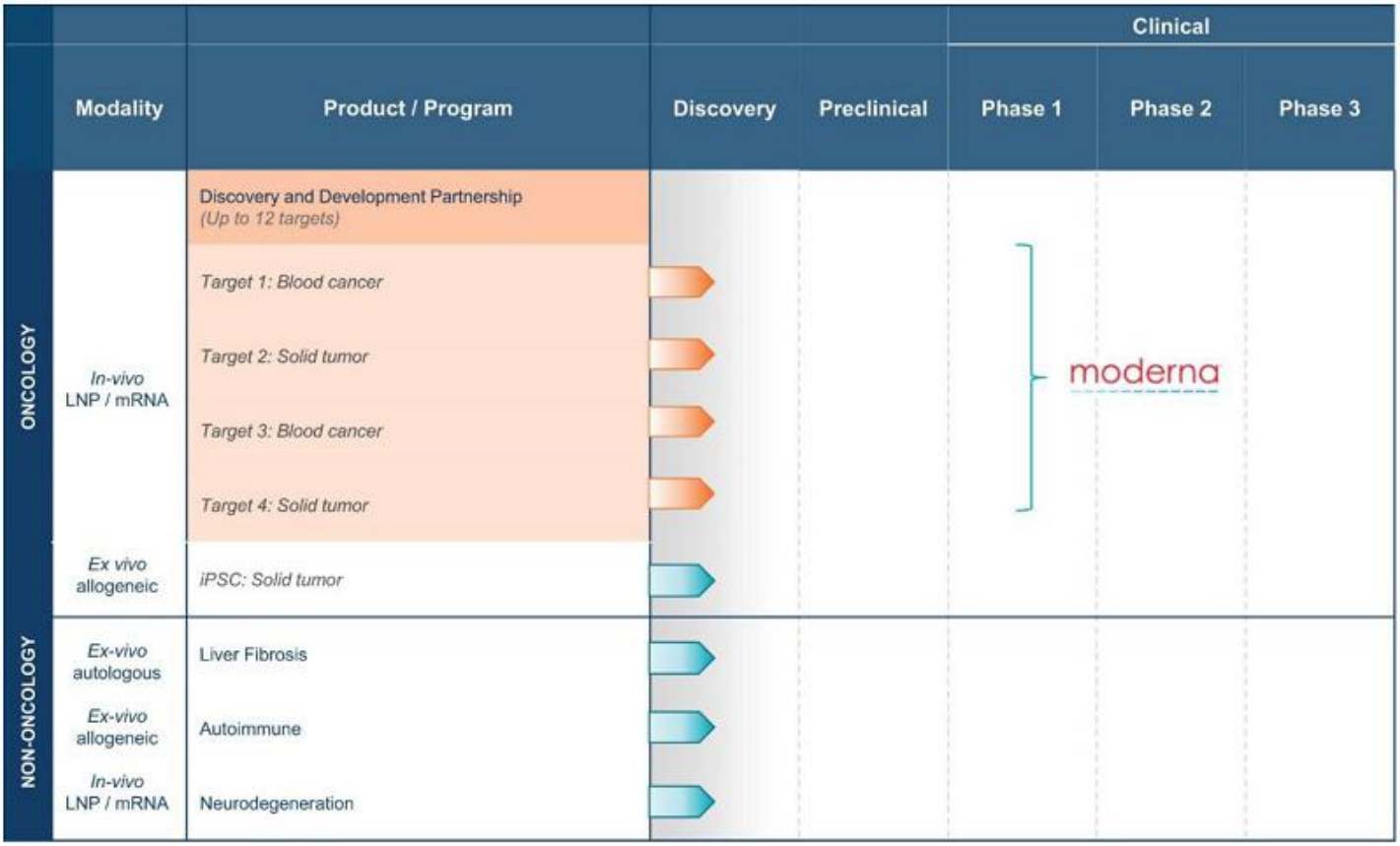
By investing in early platform research and accessing key enabling technologies, Carisma is enhancing and expanding its platform capabilities and reinforcing its leadership position in the engineered macrophage field. Carisma has developed proprietary CAR-M platform enhancements directed toward key product parameters that are important for efficacy, safety, and patient access to its CAR-M therapies. Carisma plans to apply these technology enhancements to future CAR-M product candidates.

Carisma's Pipeline Programs

Using its proprietary CAR-M platform technology, Carisma is developing a broad pipeline of product candidates, with a strong initial focus in oncology. Carisma's *ex vivo* autologous CAR-M product candidates are summarized in the table below.



Carisma is also advancing discovery-stage candidates across a range of therapeutic areas, as summarized in the following table.



Carisma's lead product candidate, CT-0508, is an *ex vivo* autologous cell therapy product candidate intended to treat solid tumors that overexpress HER2, a protein that is overexpressed on the surface of a variety of solid tumors including breast cancer, gastric cancer, esophageal cancer, salivary gland cancer and numerous others. CT-0508 is produced by engineering a patient's own monocyte-derived macrophages from blood drawn from the patient with a chimeric adenoviral vector, Ad5f35, containing an anti-HER2 CAR.

Carisma has completed enrollment of the first group of patients in a Phase 1 clinical trial, with nine patients successfully dosed. The second group is currently open for enrollment, with nine additional patients to be dosed. In November 2022, Carisma presented preliminary clinical results from the first group of patients. CT-0508 was successfully manufactured using macrophages obtained from heavily pre-treated, advanced solid tumor patients and has shown high CAR expression, viability, and purity. In addition, CT-0508 has been generally well-tolerated after infusion with no dose-limiting toxicities reported to date from the nine patients enrolled in the first group. While the results from this early clinical trial data are both preliminary and limited, Carisma believes the results indicate that CT-0508 can be detected within the TME, lead to remodeling and activation of the TME, and potentially induce anti-tumor adaptive immunity. Carisma anticipates providing multiple clinical data updates over the next 18 months. In the combination setting, Carisma has observed the synergistic potential of CT-0508 with a PD1 blocking T-cell checkpoint inhibitor in pre-clinical models, enabling a combination trial with pembrolizumab. Carisma submitted a clinical protocol amendment to the FDA in September 2022 to allow it to treat patients with the co-administration of CT-0508 and pembrolizumab, and opened the study for enrollment in December 2022. The FDA has granted "Fast Track" status to CT-0508 for the treatment of patients with HER2 overexpressing solid tumors and Carisma plans to prioritize development for this indication.

Carisma is currently in the pre-clinical stage for another product candidate, CT-0525, which is also intended to treat solid tumors that overexpress HER2. By leveraging its discovery engine and preliminary clinical data from its Phase 1 clinical trial of CT-0508, Carisma is building upon its CAR-M platform to generate next-generation therapeutics that may increase potential efficacy and patient access. Notably, Carisma has developed a novel approach to CAR-M therapy to accelerate the manufacturing process, increase the cell yield, and improve upon the potential anti-tumor effect by engineering patients' monocytes directly, without *ex vivo* differentiation into macrophages, as Carisma currently does for CT-0508. Carisma refers to this CAR-Monocyte approach as CAR-Mono. By increasing the cell yield, the CAR-Mono approach enables a larger potential dose, which may improve tumor control. The CAR-Mono approach reduces manufacturing time and leverages an automated, closed-system manufacturing process. CT-0525 is Carisma's first CAR-Mono product candidate and is currently in the pre-clinical process development stage. Carisma expects to submit an IND to the FDA for CT-0525 in the second half of 2023 and initiate clinical development shortly thereafter.

Carisma is also expanding its pipeline to include multiple tumor targets, encompassing diverse solid tumor indications with significant unmet medical needs, including the following product candidates:

- ***CT-1119:*** CT-1119 is a mesothelin targeted CAR-M that Carisma plans to evaluate in patients with advanced mesothelin-positive solid tumors, including lung cancer, mesothelioma, pancreatic cancer, ovarian cancer, and others. Carisma anticipates nominating a lead next generation CAR construct for CT-1119 in the first half of 2024 and expects to submit an IND to the FDA in 2025. In November 2022, Carisma presented preliminary and limited data demonstrating that CT-1119 can mediate phagocytosis, tumor cell killing, and pro-inflammatory cytokine release and control tumor growth in pre-clinical lung cancer models.

- ***CT-0729:*** CT-0729 is a prostate-specific membrane antigen, or PSMA, targeted CAR-M that Carisma plans to evaluate in patients with advanced, PSMA positive metastatic castrate resistant prostate cancer. CT-0729 is in the discovery stage.

Carisma's pipeline programs CT-1119 and CT-0729 may be developed using the next generation CAR-Mono approach.

Carisma's current CAR-M cell therapy pipeline is informing the discovery and pre-clinical development of off-the-shelf engineered macrophage therapeutics. Carisma is developing *in vivo* reprogrammed LNP/mRNA CAR-M therapies for cancer through its collaboration with Moderna. In addition, Carisma is establishing an *ex vivo* allogeneic, induced pluripotent stem cell, or iPSC, derived macrophage and monocyte platform with the potential to develop iPSC-derived CAR-M and other macrophage therapies for indications in oncology and beyond, including indications such as liver fibrosis, neurodegeneration and auto-immunity.

Carisma's Team

Carisma was founded in 2016 by leading cell therapy experts from the University of Pennsylvania. Dr. Saar Gill is a co-inventor of the CAR-M technology and a co-founder of Carisma. He is an Associate Professor of Medicine in the Division of Hematology-Oncology at the University of Pennsylvania. Dr. Michael Klichinsky, Pharm.D., Ph.D., is a co-inventor of the CAR-M technology, a scientific co-founder of Carisma, and Carisma's current Chief Scientific Officer. Dr. Carl June, a co-inventor of the CAR-M technology, is the Richard W. Vague Professor in Immunotherapy in the Department of Pathology and Laboratory Medicine at the University of Pennsylvania. He also is currently Director of the Center for Cellular Immunotherapies at the Perelman School of Medicine and Director of the Parker Institute for Cancer Immunotherapy at the University of Pennsylvania, and Scientific Advisor to Carisma.

Carisma's executive team has decades of experience in business operations, discovery, development, and manufacturing of advanced therapeutics for the treatment of serious diseases. Steven Kelly, Carisma's Chief Executive Officer, brings over 35 years of experience in the biopharmaceutical industry at all phases of the business across multiple therapeutic categories. Carisma's Chief Technology and Development Officer, Daniel Cushing, Ph.D., brings over 30 years of experience in the biopharmaceutical industry and is responsible for product development at Carisma. Richard Morris, Carisma's Chief Financial Officer, has more than 25 years of experience in building and growing successful biotechnology organizations, with a focus on capital fundraising (including initial public offerings), financial strategy and operations execution, and business development efforts. Carisma's Chief Business Officer, Tom Wilton, has over 25 years of biopharmaceutical industry experience, including corporate strategy, business development, research and development operations, and marketing.

Carisma's Strategy

Carisma's vision is to become a leading cell therapy company, developing and ultimately commercializing macrophage-based cell therapies that positively transform the treatment of cancer and other serious diseases. To achieve its vision, Carisma has developed its macrophage engineering platform, a pipeline of assets spanning numerous indications with unmet medical needs, a robust discovery engine, broad CAR-M intellectual property, robust manufacturing capabilities, and a dedicated executive team with extensive experience in cell therapy and drug development, manufacturing and commercialization and leading scientific expertise in the field. The key components of Carisma's strategy are:

- **Advance Carisma's lead product candidate, CT-0508, through clinical development for the treatment of HER2 overexpressing solid tumors.** CT-0508 is an *ex vivo* gene-modified autologous CAR-M cell therapy product candidate intended to treat solid tumors that overexpress HER2. Carisma has completed enrollment of the first group of patients in a Phase 1 clinical trial, with nine patients successfully dosed. The second group is currently open for enrollment, with nine additional patients to be dosed. In November 2022, Carisma presented preliminary clinical results from the first group of patients. CT-0508 was successfully manufactured using macrophages obtained from heavily pre-treated, advanced solid tumor patients and has shown high CAR expression, viability, and purity. In addition, CT-0508 has been generally well-tolerated after infusion with no dose-limiting toxicities reported to date from the nine patients enrolled in the first group. While the results from this early clinical trial data are both preliminary and limited, Carisma believes the results indicate that CT-0508 can be detected within the TME, leads to remodeling and activation of the TME, and potentially induces anti-tumor adaptive immunity. Additionally, the FDA granted "Fast Track" status to CT-0508 for the treatment of patients with HER2 overexpressing solid tumors and Carisma plans to prioritize development for this indication. Carisma has initiated a sub-study to evaluate the combination of CT-0508 with pembrolizumab, a PD1 blocking T cell checkpoint inhibitor, for patients with advanced HER2 overexpressing solid tumors.

- **Invest in Carisma's CAR-Mono platform technology to further extend its leadership position in macrophage and monocyte based cellular therapy.** As part of its ongoing platform enhancement effort, Carisma has developed its CAR-Mono approach, which significantly reduces manufacturing time and leverages an automated, closed-system manufacturing process. Carisma is currently in the pre-clinical process development stage for CT-0525, Carisma's first anti-HER2 CAR-Mono product candidate, and expects to submit an IND in the second half of 2023.

- **Advance Carisma's pre-clinical CAR-M oncology pipeline candidates to clinical development stage.** Beyond its initial HER2 target, Carisma is expanding its pipeline into multiple tumor targets and constructs. CT-1119 is a mesothelin targeted CAR-M that Carisma plans to evaluate in patients with advanced mesothelin-positive solid tumors, with an IND expected to be submitted in 2025. In November 2022, Carisma presented preliminary and limited data demonstrating that CT-1119 can mediate phagocytosis, tumor cell killing, and pro-inflammatory cytokine release and control tumor growth in pre-clinical lung cancer models. Carisma anticipates nominating a next generation CAR construct for CT-1119 in the first half of 2024. Additionally, CT-0729 is a PSMA targeted CAR-M intended for use against metastatic castrate resistant prostate cancer and is currently in the discovery stage. Carisma is also developing product candidates targeting other cancer antigens.

- **Build next-generation technologies to expand the scope and capabilities of Carisma's platform.** Beyond its CAR-M and CAR-Mono technologies, Carisma is pursuing multiple platform enhancements for its CAR constructs, editing technologies and therapeutic delivery vehicles. Further, Carisma is actively developing a gene edited iPSC-derived macrophage platform and leveraging delivery technologies for its mRNA-based *in vivo* CAR-M platform for oncology.

- **Harness the potential of Carisma's platform to develop novel product candidates to address therapeutic areas beyond oncology.** While Carisma has initially been an oncology focused company, Carisma believes the breadth of the myeloid engineering platform enables significant opportunities outside of oncology. Based on early data related to Carisma's novel therapeutic approach, Carisma believes its platform has significant potential across multiple therapeutic areas, including fibrosis, neurodegeneration, autoimmunity, and chronic inflammation, which are currently in the discovery stage.

- **Selectively enter into strategic partnerships and collaborations to maximize the potential of Carisma's platform.** Given the breadth of opportunities enabled by Carisma's platform, Carisma may opportunistically enter into strategic collaborations intended to advance and accelerate its development programs, expand into new therapeutic areas and enhance the capabilities of its platform. Carisma currently has a broad strategic collaboration with Moderna focused on the development of *in vivo* CAR-M therapeutics for up to 12 oncology targets, of which four have already been nominated.

Background

Cellular Immunotherapy

Cellular immunotherapy is a type of immuno-oncology approach whereby human immune cells are utilized to recognize and destroy cancer cells in a targeted manner. To date, cellular immunotherapy has focused on the transfer of T-cells or natural killer, or NK, cells. For example, T-cells with intrinsic tumor reactivity, such as tumor infiltrating lymphocytes, have been utilized, as well as T-cells genetically engineered with tumor targeting T-cell receptors, or TCRs, or CARs, have been tested in a variety of hematologic malignancies and solid tumors. The only FDA approved genetically modified cellular immunotherapies for cancer are CAR T-cell therapies for B cell hematologic malignancies expressing CD19 or multiple myeloma expressing B-cell maturation antigen, or BCMA.

Despite the incredible promise shown by cell therapies for hematologic malignancies, the success has not been replicated in the solid tumor setting. There are numerous challenges impacting T and NK cell immunotherapy in patients with solid tumors, such as the inability of cells to appropriately access the tumor microenvironment, overcome immunosuppression in the tumor microenvironment and overcome target antigen heterogeneity. Importantly, there have been challenges in targeting solid tumors with CAR T-cells without inducing toxicities against normal tissues or inducing severe systemic cytokine release syndrome, or CRS. To date, no CAR therapies for the treatment of solid tumors have received marketing approval.

Macrophages and Monocytes and the Tumor Microenvironment

Macrophages play a vital role in the innate immune system, the body's first line of defense against foreign pathogens. Macrophages are highly plastic innate cells that mediate a multitude of protective and homeostatic functions, including elimination of pathogens through phagocytosis, clearance of cellular debris, induction or regulation of inflammation, antigen presentation, and tissue remodeling. Macrophages can arise from circulating bone marrow-derived monocytes or embryonic precursors and are found in all tissues in the human body. Depending on the environmental cues, macrophages can actively adopt distinct activation states, or phenotypes, to either initiate or terminate immune responses. While macrophage activation states are complex, they can be categorized into two general subsets:

- ***Classically activated (M1):*** M1 macrophages are pro-inflammatory and are associated with anti-tumoral functions. They initiate or enhance immune responses by recruiting T-cells, upregulating antigen processing machinery and co-stimulatory ligands, and secreting pro-inflammatory factors cytokines and chemokines, and ultimately promote T-cell responses.

- ***Alternatively activated (M2):*** M2 macrophages are immunosuppressive and are associated with pro-tumoral functions. They accelerate tumor invasion and metastasis and promote angiogenesis (or formation of new blood vessels) by secreting inhibitory cytokines and upregulating immunosuppressive cell surface molecules, and ultimately inhibit T-cell responses.

Macrophages are typically the most abundant immune cell in the TME of most cancers, where they generally adopt an M2 phenotype and are therefore associated with poor prognostic outcomes and increased intratumoral immunosuppression. For example, numerous studies have shown that patients with more M2 macrophages in their tumors have reduced responses to immune checkpoint inhibitors such as pembrolizumab.

Given the generally negative role of M2 macrophages in the TME, there have been numerous therapeutic approaches focused on inhibiting tumor associated macrophage, or TAM, infiltration or survival. Other approaches have sought to convert TAMs from an M2 to an M1 phenotype. While numerous studies have shown that TAM infiltration is typically associated with poor prognostic outcome, macrophages have been shown to have potent anti-tumor capabilities if appropriately activated and targeted.

The Opportunity for Engineered Macrophages in Treating Cancer

Carisma believes macrophage and monocyte cell therapies hold promise in addressing the limitations of other cell types and transforming the cell therapy treatment paradigm for solid tumors. The inherent biology of macrophages and monocytes offers several potential advantages that directly apply to current barriers for cell therapy efficacy in the solid tumor context.

Macrophages and monocytes are actively recruited into solid tumors, while other immune cells such as T-cells are often actively excluded. Macrophages are professional phagocytic cells capable of directly killing tumor cells through this unique mechanism. In addition to direct killing, macrophages can secrete pro-inflammatory factors that convert the immunosuppressive TME into an environment that promotes immunity. Importantly, macrophages and monocytes are professional antigen presenting cells, meaning they can directly present tumor-derived antigens to T-cells leading to anti-tumor T-cell responses, a phenomenon known as epitope spreading. Epitope spreading enables activity against tumor cells which either lack or lose expression of the initial antigen targeted by the CAR - a key challenge for cell therapies - and ultimately enables macrophages and monocytes to overcome target antigen heterogeneity within the patient's cancer.

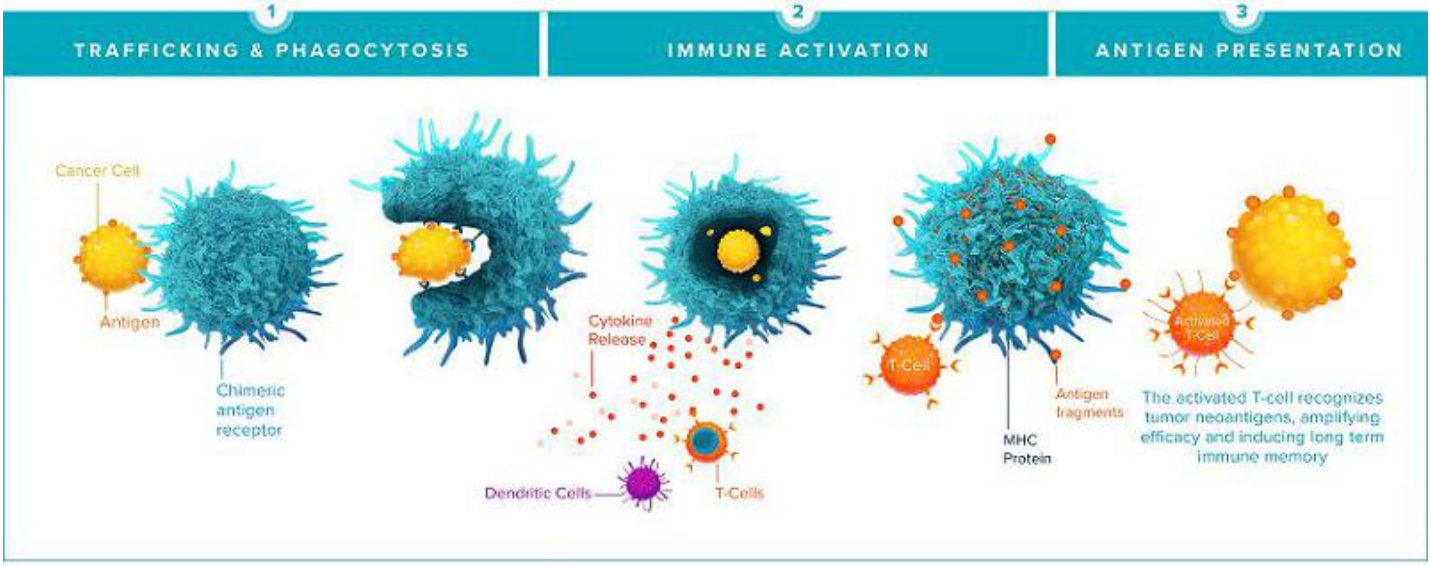
Carisma believes an approach which harnesses the direct effector functions of macrophages or monocytes, optimizes their activation status toward an inflammatory M1 phenotype, and redirects phagocytosis with molecular specificity would represent a major advance in cancer immunotherapy.

Carisma's Novel Platform

CAR-M have the potential to address the key challenges involved in treating solid tumors:

PROBLEM: **SOLID TUMORS EVADE IMMUNE DESTRUCTION**	OUR SOLUTION: **CHIMERIC ANTIGEN RECEPTOR MACROPHAGE (CAR-M)**
IMMUNE CELL TRAFFICKING Tumors limit which immune cells have access to their microenvironment.	**UTILIZING MACROPHAGES AND MONOCYTES** Macrophages and monocytes are actively recruited to solid tumors. Carisma adoptively transfers genetically engineered CAR macrophages, whose properties have been fine-tuned in the laboratory to identify and eradicate tumor cells.
IMMUNOSUPPRESSIVE SOLID TUMOR MICROENVIRONMENT Leukocytes, such as T cells, are often prevented from penetrating the tumor tissue, leading to immunologically cold tumors that fail to respond to immune therapies. Furthermore, tumors are rich with immunosuppressive factors, such as immunosuppressive cytokines, cell surface ligands, and regulatory immune cells - limiting the potential activity of immune cell therapies.	**CAR-M ACTIVATE THE TUMOR MICROENVIRONMENT** Carisma's CAR-Macrophages are polarized toward an anti-tumor, or M1, macrophage activation state, and secrete pro-inflammatory factors that generate an environment that is conducive to robust anti-tumor immunity, and recruit and activate other immune cells, such as T cells.
TARGET HETEROGENEITY AND THE DEVELOPMENT OF RESISTANCE Every cancer is unique. There is significant cell-to-cell heterogeneity within a tumor mass, allowing for the development of resistance to single-antigen targeted therapies.	**ACTIVATION OF THE ENDOGENOUS IMMUNE SYSTEM** Unlike other cell types utilized in CAR cell therapy, macrophages are professional antigen presenting cells, capable of leading to activation of the patient's own T cells, a component of the adaptive immune system. Thus, Carisma's approach allows for a broader immune response beyond the antigen target which the CAR is designed to engage.

CAR-M have the ability to infiltrate solid tumors, phagocytose and destroy tumor cells directly, and present tumor-derived antigens leading to activation of the adaptive immune system. CAR-M mount anti-tumor immunity in numerous ways. First, CAR-M leverage the natural tumor-homing ability of macrophages and monocytes, the naturally most abundant immune cells in the TME, to traffic to both primary tumors and metastases, enabling engineered macrophages to act as a "Trojan horse," tricking the tumor into recruiting engineered, anti-tumor CAR-M as if they were normal monocytes or macrophages. Once within the tumor, CAR-M directly kill antigen-expressing tumor cells through phagocytosis and secretion of cytotoxic factors. CAR-M secrete inflammatory cytokines and chemokines that promote a pro-inflammatory environment and lead to the recruitment of T-cells and other leukocytes. Finally, CAR-M serve as professional antigen-presenting cells for T-cells, inducing epitope spreading, systemic anti-tumor immunity, and immune memory against tumor antigens, expanding anti-tumor immunity to target negative tumor cells and potentially preventing antigen negative relapse.



Historically, macrophages have been challenging to genetically engineer due to their inherent resistance to most commonly used genetic manipulation methods. Furthermore, controlling the activation state of macrophages has been a long-standing challenge. Carisma believes that it has overcome these challenges with its proprietary platform that efficiently engineers macrophage-based cell therapies and enables control of their activation state.

Carisma's proprietary platform enables the therapeutic use of engineered macrophages and monocytes for the treatment of cancer and other serious diseases and disorders. In its first application, solid tumors that overexpress HER2, the CAR-M platform is designed to identify and eradicate HER2 overexpressing tumor cells.

Currently, CAR-M are an individualized therapy that begin with the isolation of monocytes, the pre-cursor cell to macrophages, from blood drawn from a patient through a process called apheresis. The cells are purified, cultured, differentiated, and engineered with a CAR which bestows the macrophage with the ability to identify and eradicate cancer cells.

To enable its proprietary CAR-M therapy, Carisma had to overcome several key technical challenges, which are summarized by its platform capabilities:

- ***Gene Delivery***: Carisma has identified Ad5f35, a chimeric adenoviral vector, as a highly efficient vector for introducing genes such as CARs into primary human macrophages and monocytes. Carisma has further developed additional proprietary technologies for *ex vivo* and *in vivo* macrophage engineering.

- ***Activation State*****:** Carisma demonstrated that Ad5f35 transduction leads to M1 polarization of human macrophages and monocytes and renders them resistant to conversion to M2 by immunosuppressive environments.

- **Tumor targeting:** Carisma demonstrated that macrophage function can be harnessed against tumors in a targeted fashion via CARs. Carisma's CARs enable antigen specific activation of macrophages and monocytes, antigen specific cancer cell phagocytosis and killing, and antigen specific release of pro-inflammatory cytokines and chemokines.

- **T-cell activation:** By appropriately engineering and polarizing CAR-M, Carisma has demonstrated that they are able to recruit and activate T-cells - a key aspect to solid tumor immunotherapy.

- **Cell manufacturing processes:** Carisma has developed manufacturing processes that enable the production of genetically engineered macrophages or monocytes for therapeutic use.

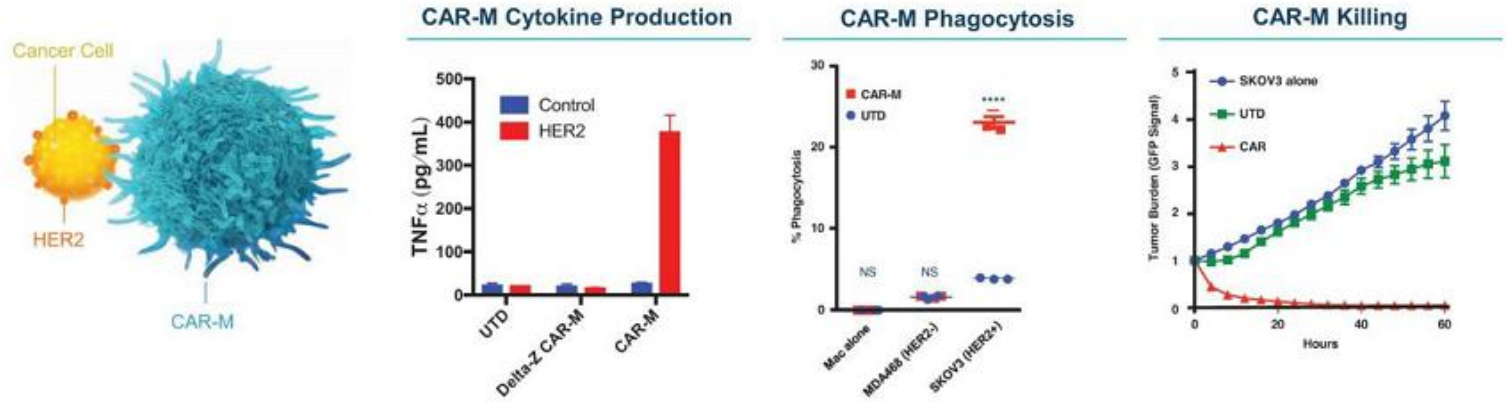
In the case of Carisma's lead product, CT-0508, a chimeric adenoviral vector, or Ad5f35, is used to deliver an anti-HER2 CAR which enables the macrophages to detect, phagocytose, kill, release inflammatory mediators, and initiate an immune reaction in response to HER2 overexpressing tumor cells. The resulting CAR-M, which are adenovirally transduced and locked into a pro-inflammatory M1 phenotype during the manufacturing process, are cryopreserved and shipped back to the patient for reinfusion. Reinfused CAR-M rapidly egress from peripheral blood and infiltrate tumor sites. Once in the tumor, CAR-M are activated by tumor-associated antigen engagement with the CAR, signaling via an intracellular signaling domain to phagocytose the tumor cell and release pro-inflammatory cytokines and chemokines that "warm up" the TME. They produce locally acting mediators that reprogram the TME, drawing in T-cells and NK cells, activating nearby antigen presenting cells, or APCs, such as dendritic cells, or DCs, and repolarizing immunosuppressive TAMs toward an M1 phenotype. In addition to direct phagocytosis of tumor cells, CAR-M present a patient's unique array of tumor antigens to T-cells, leading to a broad adaptive immune response that has the potential to generate broad anti-tumor immunity.

Pre-clinical Data

Carisma evaluated its CAR-M platform in a variety of pre-clinical *in vitro* and *in vivo* model systems and published its foundational data in Nature Biotechnology in March 2020.

First, Carisma found that Ad5f35 led to the efficient transduction of human macrophages and could be utilized to produce human CAR-M. CAR-M mediated potent antigen-specific phagocytosis and tumor killing in a targeted fashion. CAR-M took on an activated M1 phenotype, expressed pro-inflammatory cytokines and chemokines, converted bystander M2 macrophages toward an M1 phenotype, recruited T-cells, and increased antigen presentation to activate T-cells. Enhanced anti-tumor T-cell responses mediated by CAR-M were noted in humanized murine models and the findings are summarized below.

Human CAR-M Anti-Tumoral Function *In Vitro*



* SKOV3 = Human HER2+ ovarian cancer cell line
* UTD = Untransduced
* CAR = Anti-HER2 human CAR-M
* DeltaZ = CAR-M with a non-signaling control CAR

CAR-M were able to traffic to established tumors and co-localized with metastatic foci in the lung after intravenous administration without a pre-conditioning regimen. CAR-M treatment induced significant reduction in tumor burden and improved overall survival compared to mice treated with control macrophages in multiple mouse tumor models.

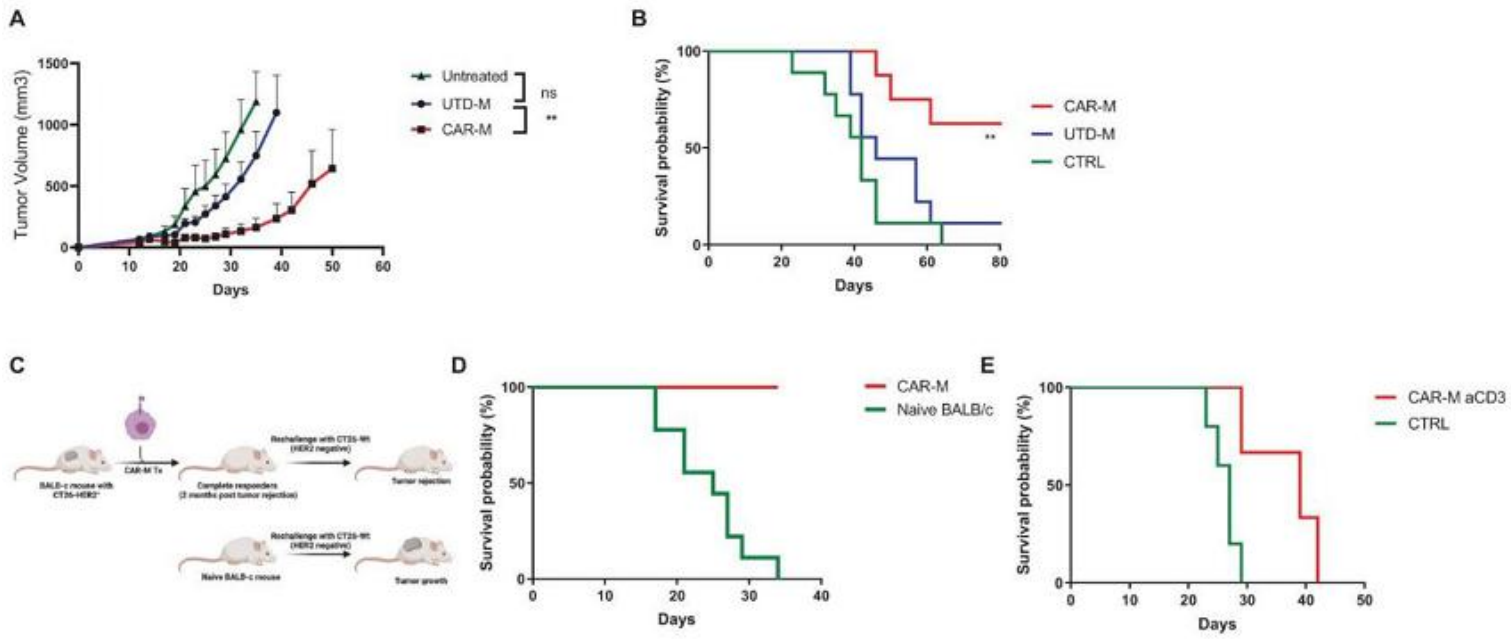
Transduction of macrophages with Ad5f35 led to the induction of a durable M1 phenotype. Despite the purported plasticity of macrophage phenotype, Ad5f35 transduced macrophages did not convert to M2 upon stimulation. CAR-M maintained a pro-inflammatory M1 state within the TME, while control macrophages were converted to M2. Additionally, CAR-M induced a pro-inflammatory signature in the surrounding TME. Given that solid tumors are rich in TAMs, Carisma evaluated the bidirectional interaction of CAR-M and M2 macrophages. While M2 macrophages failed to convert CAR-M from M1 to M2, CAR-M converted M2 macrophages to M1. Additionally, the presence of M2 macrophages did not impact the tumor killing capacity of CAR-M, highlighting their resistance to the immunosuppressive components of the TME.

Finally, CAR-M were shown to interact with cells of the adaptive immune system. CAR-M upregulated antigen presentation pathways and demonstrated heightened T-cell stimulation capacity as compared to control macrophages. Notably, CAR-M were able to present antigens to T-cells following phagocytosis. In addition, CAR-M were able to directly recruit various subtypes of T-cells.

To further its understanding of CAR-M, Carisma sought to model their function in fully immunocompetent mouse models which have an intact TME and immune system, enabling recapitulation of the complex immunological environment in human cancer patients. Toward that goal, Carisma developed a murine surrogate CAR-M to demonstrate the mechanism of action of CAR-M *in vivo* in mice which have a fully intact immune system. First, Carisma validated comparability between human and murine CAR-M. Carisma demonstrated that the same vector utilized in its clinical pipeline, Ad5f35, could be used to engineer primary murine macrophages, and confirmed that T-cells were viable, expressed CAR, and were similarly polarized to an M1 phenotype. Functional studies showed CAR-M mediated tumor killing of target cancer cells and enhanced the *in vitro* function of T-cells. Furthermore, murine CAR-M released pro-inflammatory cytokines similarly to human CAR-M.

Pre-clinical immunocompetent solid tumor models were established via subcutaneous, or SC, injection and engraftment of the murine colorectal cancer cell line, or CT26, engineered to express human HER2. In this model, intratumoral, or IT, CAR-M monotherapy significantly reduced tumor growth and prolonged overall survival compared to untransduced macrophages (macrophages not expressing a CAR). By rechallenging complete responders several months post tumor clearance with the same tumor cells lacking HER2 expression, Carisma was able to demonstrate that CAR-M therapy leads to epitope spreading and immune memory which confers protection against antigen-negative relapse.

CAR-M Control Tumor Progression, Improve Survival and Induce Long-Term Protection against Antigen-negative Relapse



* UTD-M = Untransduced macrophage

CT26-HER2+ tumors were implanted subcutaneously in immunocompetent syngeneic mice. After 15 days, mice were treated with intratumoral CAR-M, UTD-M, or left untreated. CAR-M significantly reduced tumor progression.

CAR-M significantly increased long term survival compared to control groups.

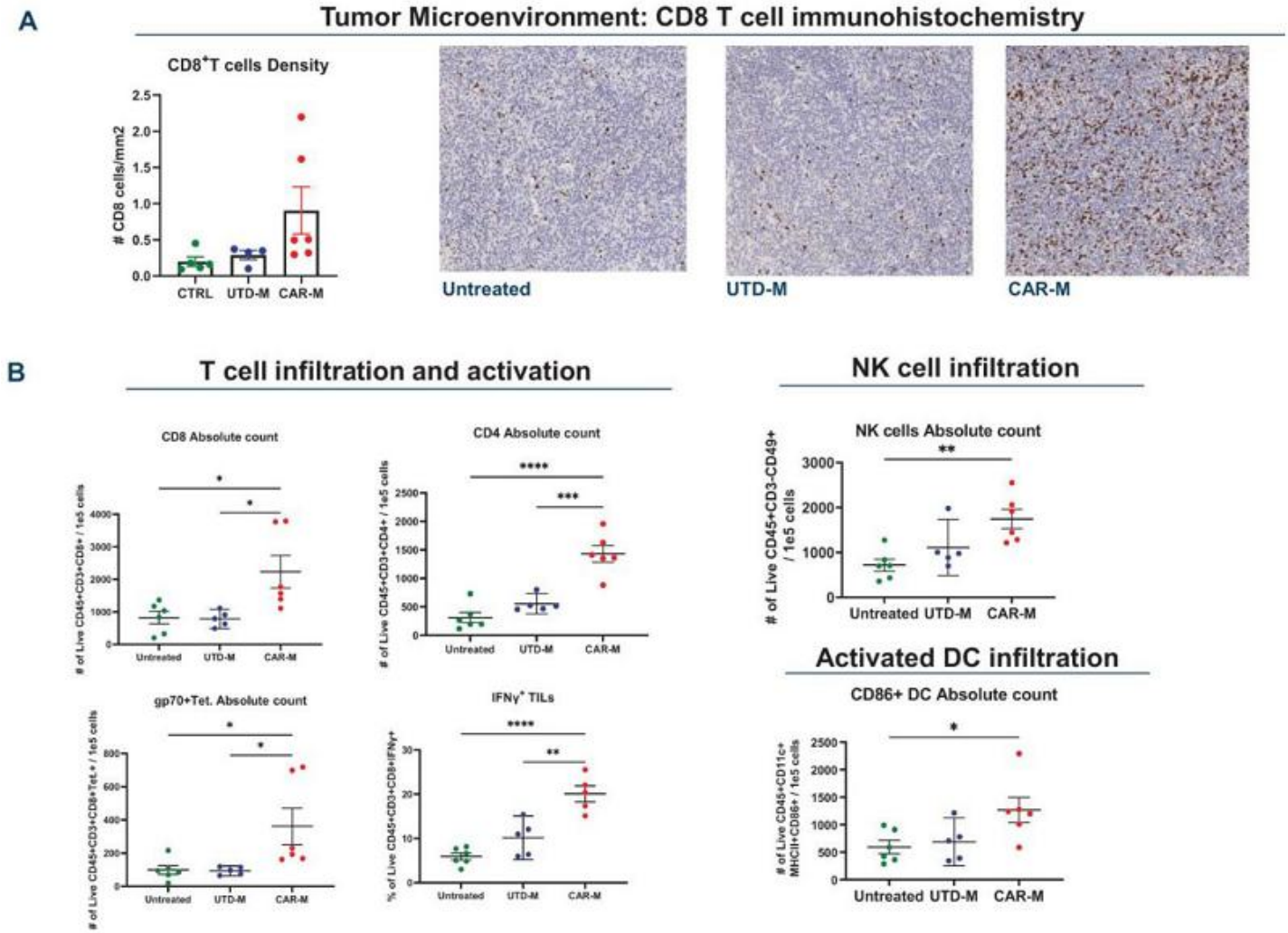
Mice achieving complete responses, or CR, post CAR-M therapy were re-challenged with HER2-negative CT26-Wt tumors to model antigen negative relapse.

Naïve mice succumbed to disease within 35 days, while 100% of the mice from the CAR-M treatment group survived, indicating long-term tumor protection against antigen negative relapse.

T-cell depletion reversed CAR-M induced protection against antigen negative relapse, indicating that CAR-M treatment led to epitope spreading and anti-tumor T-cell memory.

Analysis of the tumor microenvironment of mice receiving CAR-M therapy demonstrated the ability of Carisma's therapy to recruit additional immune cells, including T-cells, into the tumor. CAR-M led to immune activation in the TME associated with T-cell expansion, activation, and modulation of the overall T-cell repertoire of tumor infiltrating lymphocytes - suggesting the induction of a broad anti-tumor immune response.

CAR-M Reprogram the TME and Prime T-cells



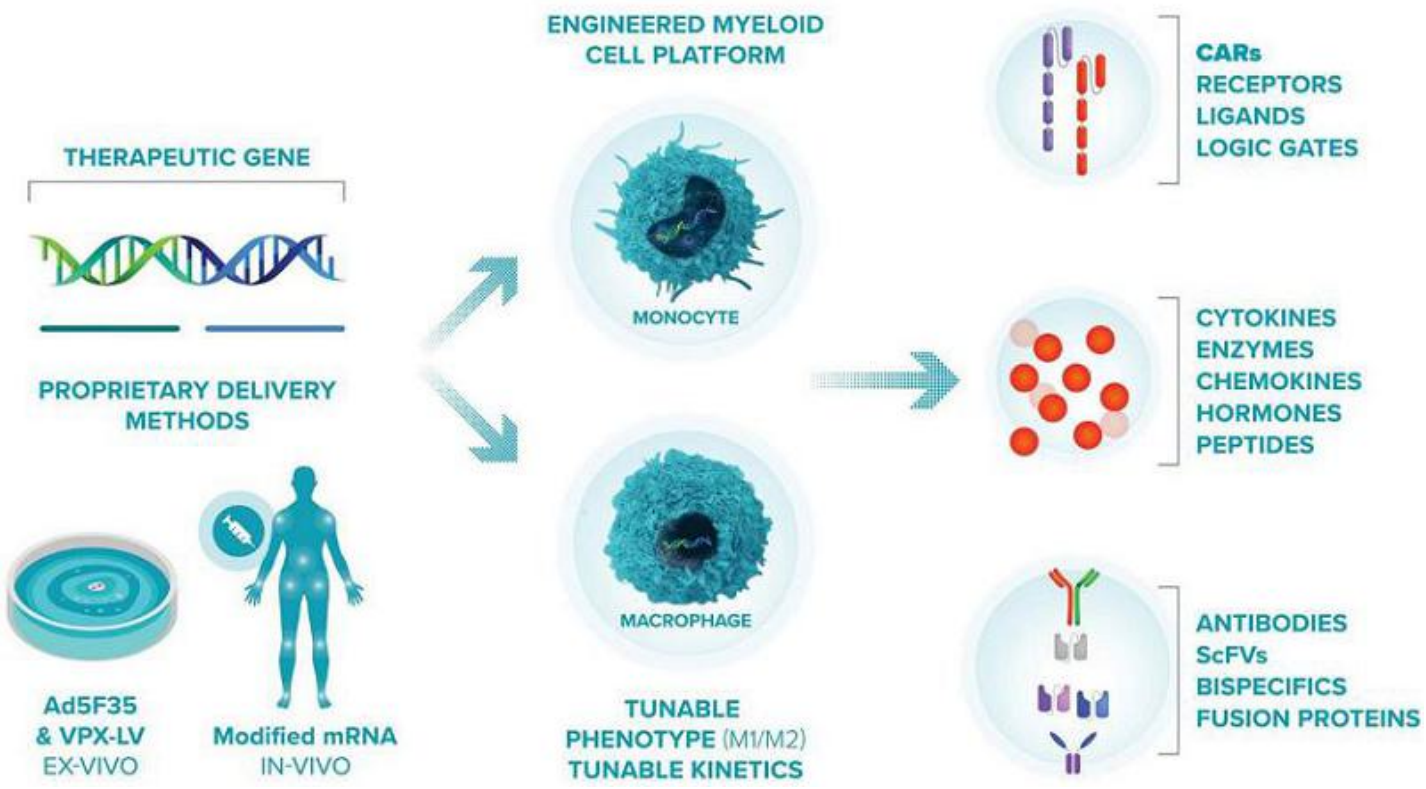
Immunohistochemistry assessment showed that CAR-M treatment increased tumor CD8+ T-cell infiltration in the CT26-HER2+ model indicating activation of the TME.

Flow cytometric analysis showed increased tumor infiltration of T-cells, NK cells, activated CD86+ DCs and tumor associated antigen specific CD8 T-cells (gp70 Tet+) in CAR-M treated mice, suggesting epitope spreading.

Combined, these results demonstrate that CAR-M have the potential to overcome some of the key challenges cell therapies encounter in the solid tumor setting and represent a novel immunotherapeutic platform that can be broadly applied to diverse tumor antigen targets.

Carisma is applying its CAR-M platform to a broad pipeline of product candidates, and Carisma intends to build a fully integrated immunotherapy company spanning autologous cell therapy, allogeneic cell therapy, and *in vivo* macrophage gene therapy. Carisma currently owns all rights to its product candidates and programs outside of its Moderna collaboration, which is limited to direct *in vivo* reprogrammed CAR-M in the field of oncology.

Macrophage and Monocyte Engineering Platform



Gene Delivery

At the core of Carisma's platform are its proprietary viral and non-viral approaches for delivering different payloads into macrophages and monocytes and engineering them into a variety of phenotypes depending on the disease which they are intended to treat.

For its initial solid tumor programs, Carisma's adenoviral vector enables Carisma to generate an abundant supply of CAR-M cells and engineer the cells to be locked into an M1 phenotype. Carisma selected Ad5f35 after testing commonly utilized viral and non-viral approaches and demonstrating Ad5f35's high efficiency in transducing primary human monocytes and macrophages. Ad5f35 can transduce macrophages with high efficiency, viability and reproducibility amongst donors. In addition to being highly efficient, transduction with Ad5f35 polarizes and locks macrophages into an M1 phenotype.

In addition to Ad5f35, Carisma's platform includes two other proprietary methods for delivering genes into macrophages. The first is a modified lentiviral vector, or Vpx-LV, which carries viral protein X. Vpx-LV depletes SAMHD1 and permits lentiviral transduction of primary human monocytes, macrophages, and dendritic cells. Vpx-LV was developed by Dr. Nathaniel Landau at New York University, and Carisma holds a global exclusive license to develop this vector. Unlike Ad5f35, which induces a potent M1 phenotype upon transduction, Vpx-LV has minimal impact on macrophage phenotype and can be utilized as a flexible tool to generate M0 (non-activated), M1 (pro-inflammatory), or M2 (anti-inflammatory) polarized myeloid cell therapies with durable gene expression. Additionally, Carisma has developed a proprietary non-viral mRNA-based approach to transiently engineered macrophage and a companion method to induce a durable pro-inflammatory M1 phenotype. Carisma has successfully generated M1-primed non-viral CAR-M using a research manufacturing process consisting of mRNA transfection to deliver the CAR transgene followed by IFNβ priming to polarize the cells to an M1 anti-tumoral phenotype. Non-viral CAR-M demonstrated high viability, high CAR expression, M1 polarization and anti-tumoral function *ex vivo* similar to Ad5f35 engineered CAR-M. Additionally, in partnership with Moderna, Carisma is developing a myeloid tropic LNP/mRNA platform to program CAR-M directly *in vivo*.

Approach to Pipeline

Carisma's proprietary technology and engineering capabilities enabled it to pioneer the CAR-M field and conduct the first in human CAR-M clinical trial, establishing its leading position in the engineered macrophage space. Carisma's goal is to advance *ex vivo* autologous cell therapies and off-the-shelf therapies including allogeneic cell therapies and direct *in vivo* reprogramming approaches in oncology and other indications:

Expansion: Building Upon the Learnings of Autologous Cell Therapy

While the first iteration of its platform is the CAR macrophage, Carisma has expanded its capabilities to include multiple myeloid cell types (monocytes, macrophages, and dendritic cells), multiple gene delivery modalities (Ad5f35, Vpx-LV, and mRNA), various phenotypes (M1, M2, and subtypes thereof), and a broad variety of payloads including CARs, immune ligands, secreted or tethered cytokines, transcription factors, and other genes that enhance efficacy. Importantly, Carisma has expanded its platform to enable *in vivo* engineering of myeloid cells directly within the patient's body. Additionally, Carisma has established a robust process to edit the genome of human myeloid cells by utilizing tools such as CRISPR/Cas9, enabling gene edited macrophages with inhibitory pathways such as SIRPα genetically removed from the cell product. Carisma's engineered macrophage platform enables fine tuning the activation state of the engineered macrophage or monocyte. Finally, Carisma has established a novel Engineered Myeloid Microenvironment Converter, or EM-C, platform that utilizes proprietary synthetic cytokine switch receptors to generate engineered macrophages that respond to M2 cytokines with M1 responses (for oncology applications) or to generate engineered macrophages that respond to M1 cytokines with M2 responses, for auto-immune or chronic inflammatory diseases.

Carisma's Pipeline of Product Candidates and Discovery Programs

Using its proprietary CAR-M platform, Carisma is developing a broad pipeline of product candidates, with an initial focus in oncology.

Lead Product Candidate: CT-0508

CT-0508 is a cell product comprised of autologous, peripheral blood monocyte-derived, pro inflammatory macrophages, transduced with a chimeric adenoviral vector, Ad5f35, containing an anti-HER2 CAR. The anti-HER2 CAR is a first-generation CAR composed of a fully human single-chain variable fragment, or scFv, derived from the monoclonal antibody trastuzumab, which is specific for human HER2. The anti-HER2 scFv is fused to a CAR backbone containing a cluster of differentiation CD8 hinge, CD8 transmembrane domain, and a CD3ζ intracellular domain. The CAR is cloned into an adenoviral vector backbone and transduced into monocyte-derived macrophages. Based on the pre-clinical data generated to date, CT-0508 CAR-M are able to specifically recognize HER2 overexpressing tumor cells, which triggers both direct killing of tumor cells and phagocytosis. Additionally, CAR engagement by HER2 on tumor cells results in the secretion of a broad array of pro-inflammatory cytokines and chemokines, which contribute to the recruitment and activation of additional immune cells to the TME, including effector T-cells and other antigen presenting cells. CT-0508 CAR-M are antigen presenting cells, and after phagocytosing tumor cells they process tumor-derived antigens and present them to T-cells, leading to T-cell immunity against tumor antigens. This additional activation of the adaptive immune system amplifies anti-tumor immune response and can lead to long term immune memory not only against HER2, the primary target, but other tumor specific neoantigens as well.

The Phase 1 clinical trial of CT-0508 is currently ongoing. As of March 7, 2022, seven clinical sites were open for screening and enrollment: (i) the University of Pennsylvania Abramson Cancer Center, (ii) the University of North Carolina Lineberger Comprehensive Cancer Center, (iii) the City of Hope National Medical Center, (iv) the MD Anderson Cancer Center, (v) the Sarah Cannon Cancer Research Institute, (vi) Oregon Health & Science University and (vii) Fred Hutchinson Cancer Center.

In November 2022, Carisma presented preliminary clinical results from the first group of patients. CT-0508 was successfully manufactured using macrophages obtained from heavily pre-treated, advanced solid tumor patients and has shown high CAR expression, viability, and purity. In addition, CT-0508 has been generally well-tolerated after infusion with no dose-limiting toxicities reported to date from the nine patients enrolled in the first group. While the results from this early clinical trial data are both preliminary and limited, Carisma believes the results indicate that CT-0508 can be detected within the TME, lead to remodeling and activation of the TME, and potentially induce anti-tumor adaptive immunity.

The FDA has granted "Fast Track" status to CT-0508 for the treatment of patients with HER2 overexpressing solid tumors. The components of CT-0508 cells are shown below:

Key Components of First-Generation CAR Construct

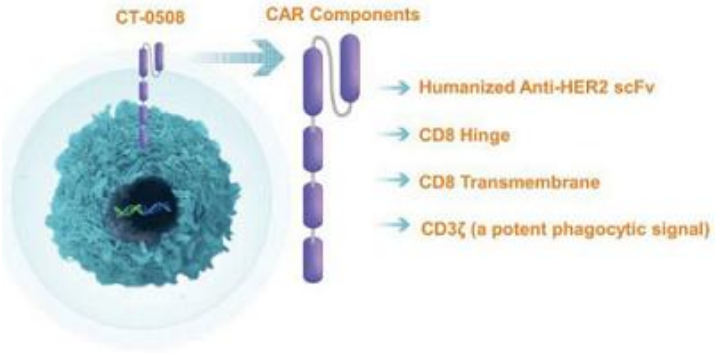


Figure Legend: CT-0508 is an autologous monocyte derived macrophage cell product engineered with the adenoviral vector Ad5f35 to express an anti-HER2 CAR. The CAR is comprised of a single chain variable fragment derived from a humanized anti-HER2 antibody which provides specificity against the target antigen. The scFv is linked to a hinge domain derived from the human CD8 protein, which enables extension and flexibility from the cell membrane surface. The hinge is linked to a CD8 transmembrane, or TM, domain which spans the cell membrane, linking the extracellular portion of the CAR to the intracellular portion of the CAR, which is comprised of CD3ζ. CD3ζ signaling is activated when the CAR binds to the target antigen, leading to macrophage activation, phagocytosis, tumor cell killing, and release of pro-inflammatory factors such as cytokines and chemokines.

CT-0508 Therapy for HER2+ Solid Tumors

While therapies targeting solid tumors that overexpress HER2 have led to improved survival in breast and gastric or gastro-esophageal junction cancers, there remains an unmet need in patients with advanced HER2 positive, or HER2+, cancers and HER2 expressing cancers, including metastatic lung, ovarian, colon, bladder, and other cancers for which there are no HER2 targeted agents.

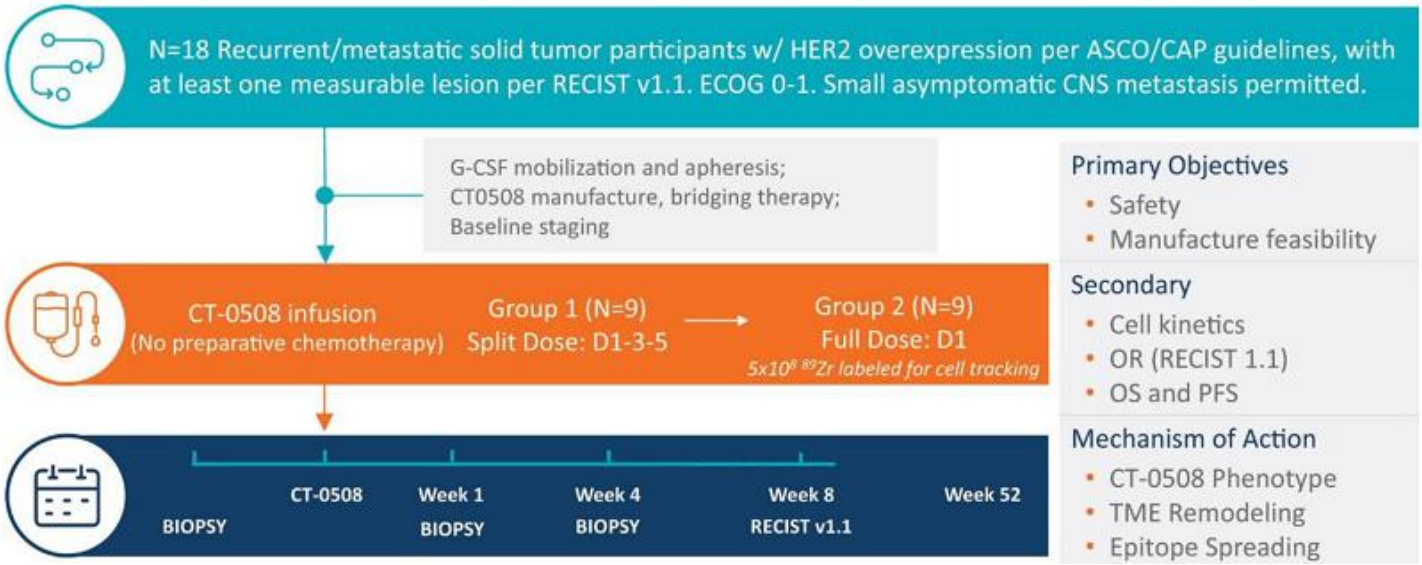
Approximately 20% of breast cancers overexpress HER2, a protein that is overexpressed on the surface of a variety of solid tumors. In addition to breast, gastric, and gastroesophageal junction cancers, HER2 is also overexpressed in a number of solid tumor indications including but not limited to bladder cancer, ovarian cancer, lung cancer and colon cancer.

HER2 Positivity Frequencies Across Tumor Types	
Tumor type	HER2 positivity (%)
Bladder cancer	8 - 70
Breast cancer	11.0 - 25.0
Cervical cancer	2.8 - 3.9
Colorectal cancer	1.6 - 5.0
Esophageal cancer	12.0 - 14.0
Extrahepatic Cholangiocarcinoma	6.3 - 9.0
Gallbladder cancer	9.8 - 12.8
Gastric adenocarcinoma	7.0 - 34.0
Ovarian cancer	26
Salivary duct carcinoma	30 - 40
Salivary mucoepidermoid carcinomas	17.6
Testicular cancer	2.4
Uterine cancer	3.0

CT-0508 Clinical Study Design - Study 101

The ongoing Phase 1 clinical trial of CT-0508 is a single-arm, open-label study of systemic intravenous administration of CT-0508. This study is intended to evaluate safety, tolerability, cell trafficking, cell-manufacturing feasibility, and preliminary evidence of efficacy in approximately 18 subjects with locally advanced or metastatic solid tumors overexpressing HER2 who have failed available therapies.

A summary of the clinical trial design, dosing regimen, sample collection regimen, and primary and secondary objectives are shown below:



Filgrastim, or recombinant G-CSF, is administered to patients for four days prior to apheresis to mobilize monocytes into the peripheral blood, increasing the available circulating monocyte count prior to collection by apheresis. The CT-0508 cell product is then prepared, cryopreserved, and released following quality control testing. The first three participants in the study were hospitalized for eight days after the first infusion of CT-0508 (Day 1 to Day 8) as part of the pre-determined study design. There is no preparative chemotherapy prior to the cell product infusion. The first group of nine patients have been treated with a divided dose regimen consisting of:

- ***Day 1:*** Up to 0.5×10^9 cells;
- ***Day 3:*** Up to 1.5×10^9 cells; and
- ***Day 5:*** Up to 3.0×10^9 cells.

Adverse event reporting begins at the start of mobilization and continues until any toxicities resolve or are deemed irreversible. Participants are continually reassessed for evidence of acute and/or cumulative toxicity. Approximately nine participants in the second group of patients will receive up to 5.0×10^9 total manufactured CT-0508 cells in a single infusion on Day 1.

HER2 has several advantages as a target antigen for CAR-M. In addition to being expressed in a variety of solid tumor types with significant unmet medical needs, HER2 is not shed or internalized and is only expressed at low levels in non-tumor tissues. As HER2 expression is typically maintained over the course of disease, CT-0508 may be developed for treatment of metastatic disease, for example, in the liver and lung, as well as primary tumors. Additionally, HER2 is typically not lost after patients with metastatic cancer progress on available HER2 targeted therapies, rendering HER2 refractory patients potentially eligible for CT-0508 therapy.

Participants enrolled in Study 101 undergo one pre-treatment and two on-treatment biopsies to assess CT-0508 trafficking, impact on the TME, induction of anti-tumor T-cell immunity, and other biomarkers. Blood samples are also collected over a period of 52 weeks for evaluation of pharmacokinetics and biomarkers associated with safety and efficacy.

Based upon clinical data, Carisma may seek Regenerative Medicine Advanced Therapy, or RMAT, and PRIority MEdicine, or PRIME, designations for CT-0508, which provide an expedited developmental and approval pathway, in the United States and the European Union, respectively.

CT-0508 Clinical Data - Study 101

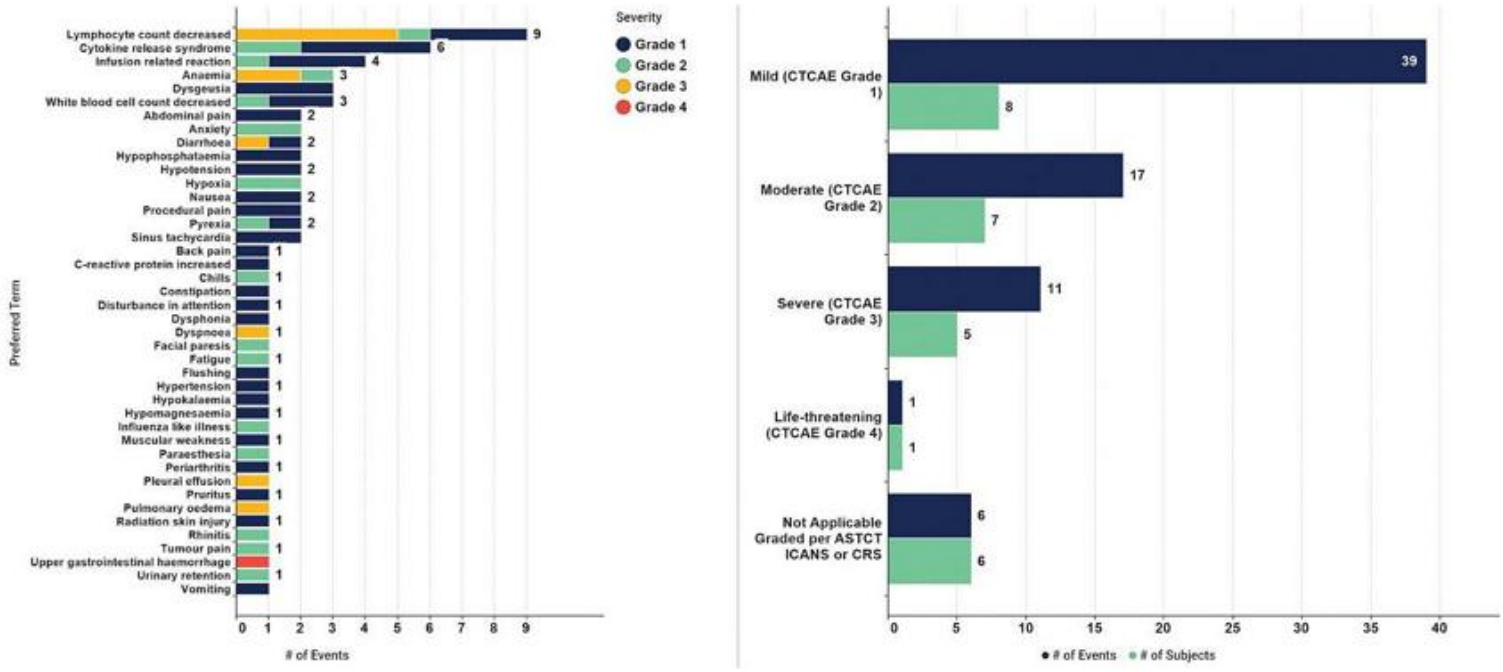
Enrollment of the first group of nine patients in the Phase 1 clinical trial of CT-0508 has been completed and enrollment in the second group is currently ongoing. Carisma successfully generated CT-0508 product for all participants enrolled in the first group of the study with an average cell viability of 89%, an average purity of 85%, and an average CAR transduction of 81%.

Carisma has reported on the safety, clinical response, and correlative studies for the first nine patients dosed in the first group of the clinical trial. Of such patients, two had HER2 overexpression levels of 2+ by immunohistochemistry staining, or IHC, with additional fluorescent in-situ hybridization FISH confirmation; and seven had levels of HER2 3+ by IHC. HER2 grading was performed based on the ASCO/CAP guidelines. Patients in the trial had three median prior therapies with a range of two to 11. Patients had a median of two prior HER2 targeted therapies, with a range of zero to nine.

CT-0508 was well tolerated with no dose-limiting toxicities. The majority (55.5%) of subjects with treatment-emergent adverse events, or TEAEs, by maximum severity were Grades 1 and 2. One subject experienced an unrelated Grade 4 TEAE (related to progression of disease of the patient's cancer). For subjects with TEAEs considered related to CT-0508, the majority (66.6%) were Grades 1 and 2, and none were Grades 4 or 5 severity. With respect to TEAEs of special interest, six patients experienced CRS, and all of these were Grades 1 and 2. There were no episodes of immune cell therapy associated neurotoxic syndrome, or ICANS, reported. No patients had severe CRS. No AEs, or SAEs, led to CT-0508 dose modification or discontinuation. No major organ toxicity was observed. The majority of AEs, regardless of relatedness, were Grades 1 and 2.

Overview of Subjects with Treatment-Emergent Adverse Events (Safety Population)	
Category	n = 9 (%)
Treatment-Emergent Adverse Event (TEAE)	9 (100.0)
TEAE, Related to CT-0508	8 (88.9)
TEAE, Serious AE	4 (44.4)
TEAE, Serious AE Related to CT-0508	2 (22.2)
TEAE, AEs of Special Interest	7 (77.8)
◦ Grade 1	3 (33.3)
◦ Grade 2	4 (44.4)
◦ Grade 3	0 (0.0)
◦ Grade 4	0 (0.0)
◦ Grade 5	0 (0.0)
Discontinued CT-0508 due to TEAE	0 (0.0)

Summary of AEs by Preferred Term and by Severity

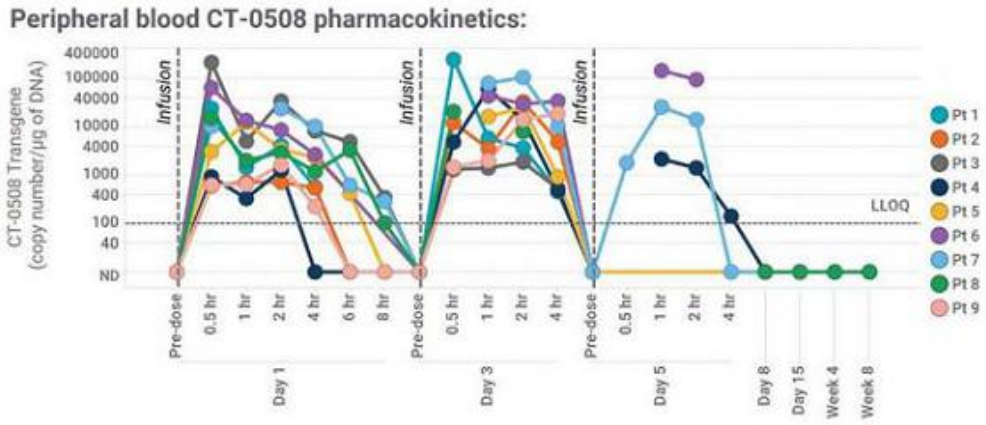


The best overall response was stable disease per RECIST 1.1 criteria. A best overall response of stable disease was observed in four out of nine patients.

Transient and low-grade fever was observed in seven out of nine patients post CT-0508 infusion. All fevers resolved within 48 hours. In concordance with clinical observations, a transient increase in serum IL-6, a pro-inflammatory cytokine, was observed.

Carisma evaluated the pharmacokinetics, or PK, of CT-0508 in the peripheral blood and the tumor. Similar peripheral blood PK was observed for all nine participants with CT-0508 detectable only on infusion days for four to eight hours post-infusion, consistent with rapid migration of CAR-M from the blood to tissues following infusion. CT-0508 was detected within the TME of eight out of nine evaluable patients assessed to date using RNAscope™ technology as shown below. These data suggest that CT-0508 rapidly egresses from the peripheral blood and successfully traffic to the biopsied tumor mass.

CT-0508 Rapidly Migrates Out of the Blood and is Detected within the TME of 8/9 Participants Evaluated



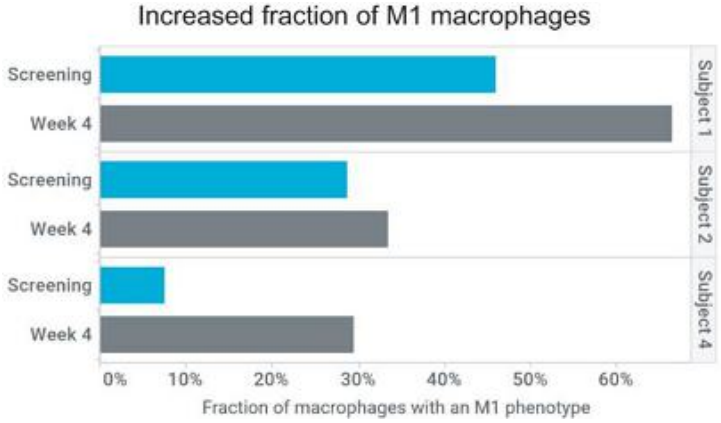
CT-0508 detection in the TME:

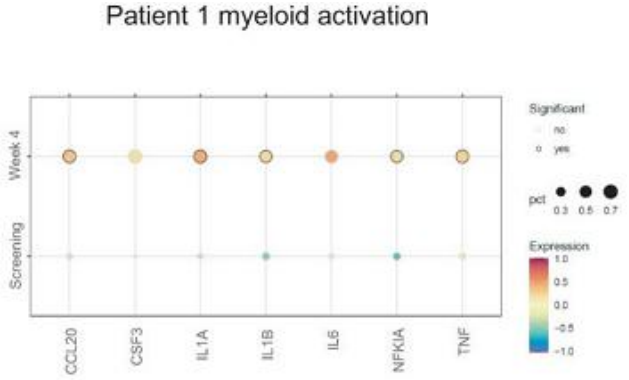
Pt	Day 8	Week 4
1	-	+
2	+	+
3	+	-
4	-	+
5	+	N/A
6	+	-
7	+	-
8	+	-
9	-	-

To evaluate the mechanism of action of CT-0508, single cell RNA sequencing, or scRNAseq, analysis was performed on fresh tumor biopsy to investigate changes within the TME following CT-0508 infusion. Analysis of screening (n=5), Day 8 post-infusion (n=5) and Week 4 post-infusion (n=3) biopsies revealed increases in CD8 T-cells, macrophages, and neutrophils on treatment consistent with inflammation and activation of an immune response.

These increases were also associated with reprogramming of the infiltrating macrophages toward an M1 phenotype by Week 4.

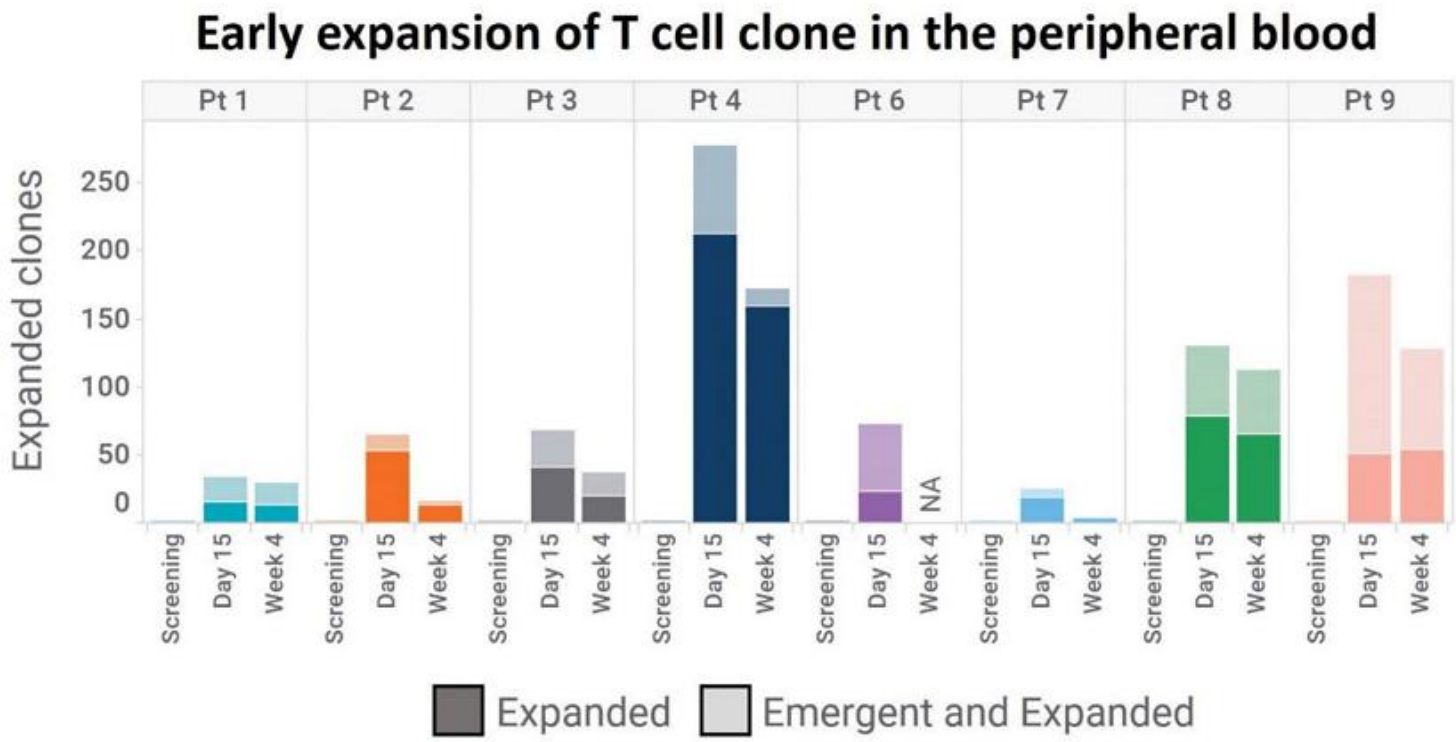
Single Cell RNAseq Analysis Demonstrates Remodeling of the Tumor Immune Landscape Following CT-0508 Infusion





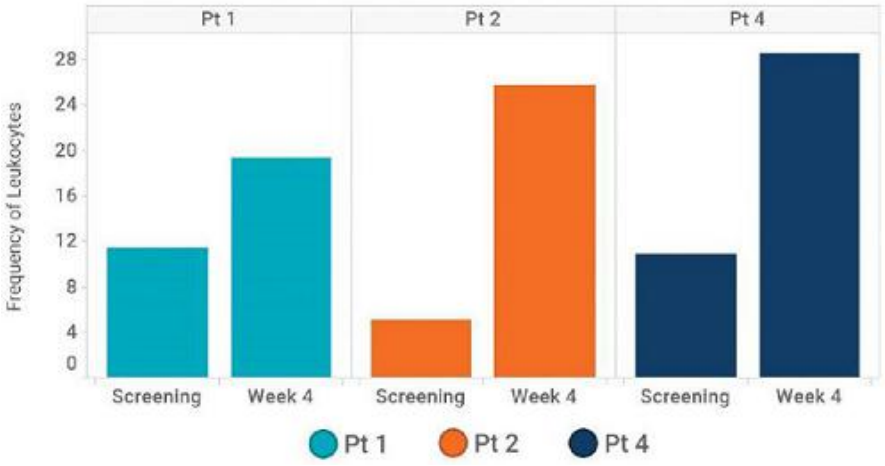
To evaluate whether CT-0508 was able to initiate anti-tumor adaptive immunity, TCR repertoire analysis was performed utilizing the Adaptive Biotechnologies™ TCR sequencing platform. The analysis was performed on peripheral blood and tumor tissue. Peripheral blood TCR repertoire analysis revealed an expansion of T-cell clones in the blood of participants post CT-0508 infusion, indicative of the initiation of an adaptive immune response.

Early Expansion of T-cells in the Periphery Following CT-0508 Infusion



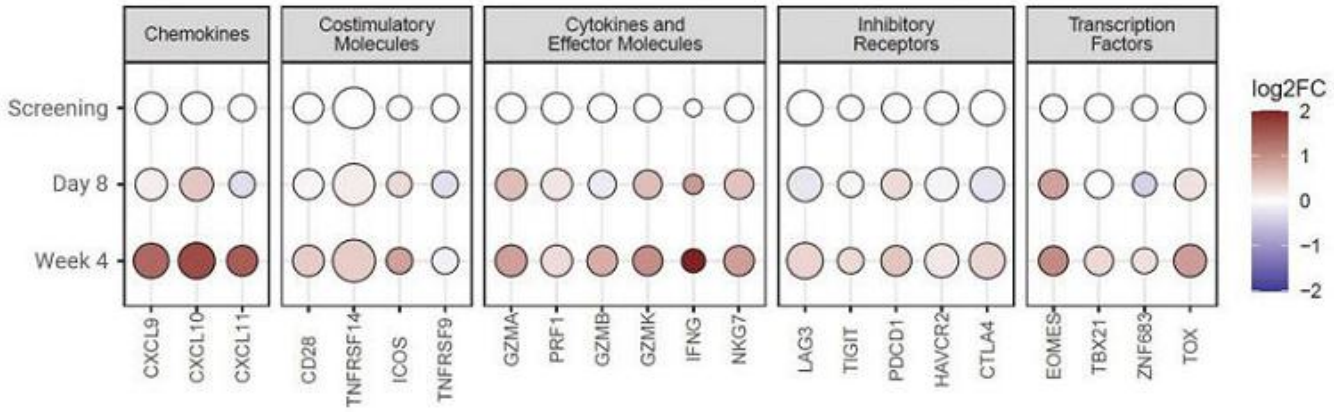
Based on scRNAseq analysis, the frequency of effector T-cells increased in all three participants with available screening and Week 4 biopsies (shown below). Furthermore, Carisma evaluated T-cell subtypes and found that Participant 1 demonstrated an increase in proliferating and effector memory CD8 T-cells, Participant 2 demonstrated an increase of all subsets except for activated CD8 T-cells, and Participant 4 demonstrated an increase in activated CD4, activated CD8 and effector memory CD8 T-cells.

Frequency of effector T-cells in TME



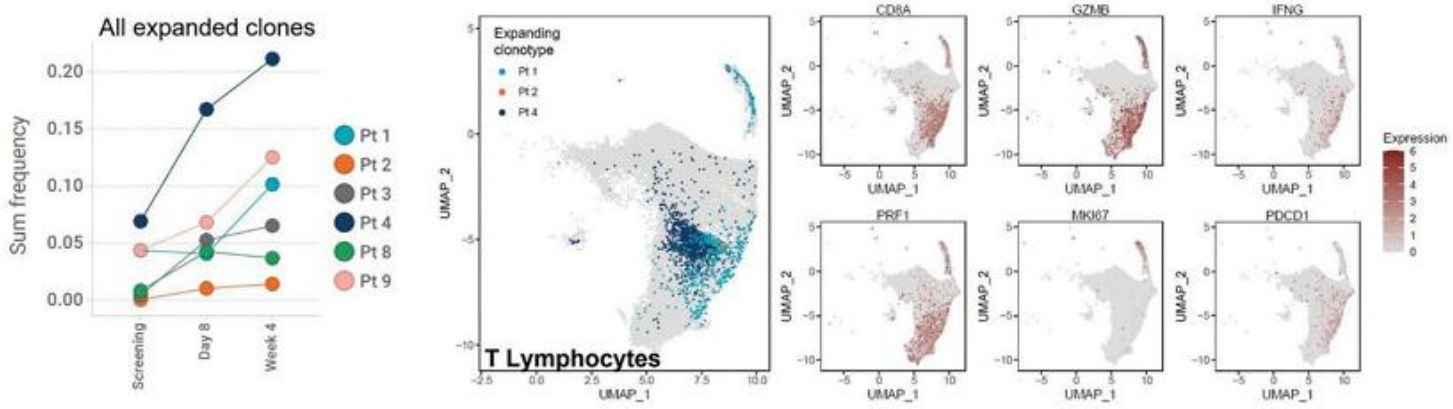
Differential gene expression analysis performed on biopsies collected at Week 4 post-CT-0508 infusion demonstrated an increased expression of genes associated with cytotoxic CD8 T-cell activation when compared to pre-treatment expression TME samples from six patients analyzed by RNA sequencing.

Increased T-Cell Activation in the TME



TCR repertoire analysis of the TME revealed that newly expanded peripheral clones accumulated over time within the TME, suggesting that these clones are tumor reactive. Expanding T-cell clonotypes from patient 1, 2 and 4 at Week 4 post-infusion clustered with cells expressing high levels of CD8α, perforin, granzyme B, Ki67, IFNγ, and PD1 demonstrated their activated and/or proliferating CD8 cytotoxic T lymphocyte phenotype.

Peripherally Expanded T-cell Clones Accumulate in the TME and Adopt a Cytotoxic Phenotype



While preliminary, the clinical data to date confirmed that CT-0508 is successfully manufactured from heavily pre-treated solid tumor patients, has been well tolerated, traffics to the tumor, activates the TME, and may initiate anti-tumor adaptive immunity.

Additional CT-0508 Studies

CT-0508 and Pembrolizumab combination sub study

This open-label sub study will assess the safety and feasibility of co-administering CT-0508 in combination with the PD-1 inhibitor, pembrolizumab. The target population for this sub study are subjects at least 18 years of age who meet inclusion criteria per the main protocol and have HER2 over-expressing solid tumors and meet the sub study specific eligibility criteria. Carisma expects to report clinical data for this sub study in the second half of 2023.

CT-0508 Intraperitoneal administration sub study

This sub study has been designed to assess the safety and feasibility of CT-0508 via regional administration into the peritoneal cavity. The target population for this sub study are subjects at least 18 years of age who meet inclusion criteria per the main protocol, that have HER2 over-expressing gynecological cancers including but not limited to ovarian, fallopian tube, primary peritoneal, and endometrial cancers, who have disease spread mainly within the peritoneal cavity that meet the sub study specific eligibility criteria. Subjects will be enrolled at select clinical sites participating in Study 101 that have the capability to enroll and adequately treat subjects with intraperitoneal administration of CT-0508. Carisma expects to report clinical data for this sub study in the second half of 2023.

CT-0508 Biodistribution sub study

This open-label sub study is designed to evaluate the whole body biodistribution of CT-0508 after intravenous administration using radiolabeled CT-0508 and longitudinal PET/CT imaging. This sub study includes ^{89}Zr-oxine radiolabeling a fraction of the CT-0508 cell product, followed by administration on Day 1 and PET/CT imaging approximately on Day 1, 4, 8, 15, and 28 to assess trafficking and biodistribution of CT-0508. The target population for this sub study are subjects at least 18 years of age that meet inclusion criteria per the main protocol. Subjects will be enrolled at specific sites in Study 101 that have the capability to perform ^{89}Zr-oxine labeling, administration, and routine PET/CT analysis.

Synergistic Potential of CAR-M Therapy with T-Cell Checkpoint Inhibitors

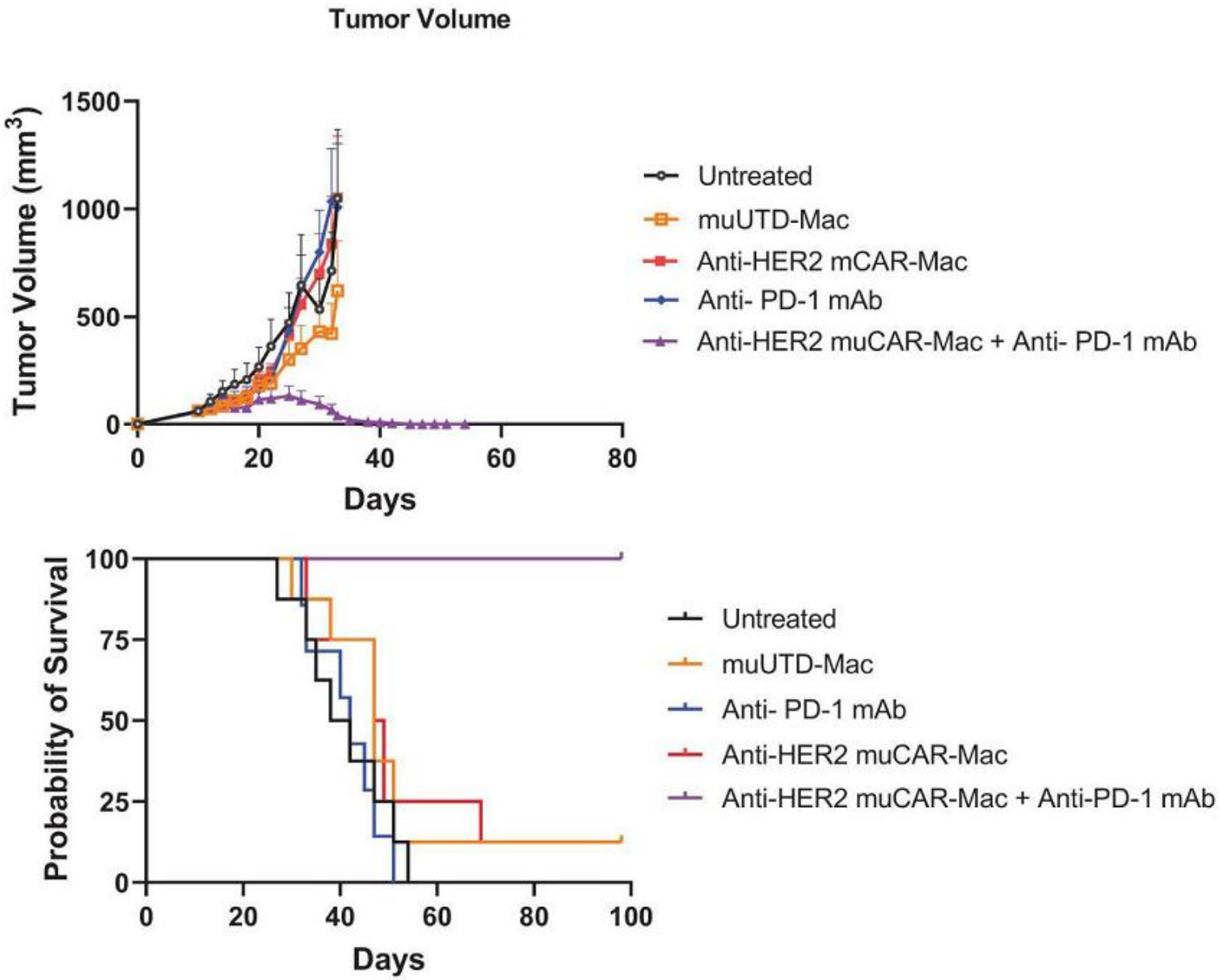
Blocking the immune checkpoint molecule programmed cell death 1, or PD-1, has revolutionized cancer treatment for patients with a multitude of solid tumor indications. Pembrolizumab is a potent humanized immunoglobulin G4, or IgG4, monoclonal antibody, or mAb, with high specificity of binding to the PD-1 receptor, inhibiting its interaction with programmed cell death ligand 1, or PD-L1, and programmed cell death ligand 2, or PD-L2. While pembrolizumab is currently indicated for the treatment of patients across several solid tumor indications, the majority of patients have either primary or secondary resistance to immune checkpoint blockade and may benefit from combinatorial therapy that could overcome immune cell exclusion, poor antigen presentation, low T-cell infiltration, high TAM infiltration, a lack of productive co-stimulation, low mutational burden, IT immunosuppression, and a low frequency of tumor reactive T-cell clones.

Based on the data generated during pre-clinical development, CT-0508 cell product is able to specifically recognize, cancer cells through the binding of the CAR to HER2 expressed on the surface of these cells. This interaction triggers activation of the CAR-macrophages and results in direct anti-tumor effect by killing and phagocytosis of the tumor cells. In addition, CT-0508 recruits T-cells, activates the TME, and as professional antigen presenting cells, can process and present tumor associated antigen and/or neoantigens expressed by the tumor cells, leading to T-cell immunity against these specific antigens. However, this indirect anti-tumor effect involves the engagement of T-cells that may be actively suppressed, or exhausted, within the tumor micro-environment by a variety of factors including secreted immune-modulatory factors and inhibitory ligands expressed on both immune and tumor cells. Additionally, several studies have demonstrated that patients with low mutational burden, low MHC expression, defective antigen presentation, low CD8+ T-cell infiltration, or minimal Th1 cytokine signatures tend to be unresponsive to PD-1 blockade. Therefore, based on the mechanism of action of CT-0508 and the limitations of PD-1 blockade, the combination of CAR-M therapy with PD-1 blockade therapy may be beneficial by enhancing antigen presentation (innate immunity) to initiate a robust anti-tumor T-cell response (adaptive immunity).

CAR-M and PD-1 blockade combination therapy: Pre-clinical Development

To model the combination of CT-0508 cell therapy with anti-PD-1 inhibitors, Carisma used a murine colorectal cancer cell line engineered to overexpress human HER2. Tumors were established in the flank of the immune competent mice and 14 days post tumor inoculation, mice were randomized and received either murine CAR-M alone (IV), murine PD-1 blockade alone (IP) or a combination of both treatments. Using a regimen where CAR-M was injected first when the tumor was well established, followed by the anti-PD-1 inhibitor a few days later, neither murine CAR-M (Anti-HER2 muCAR-Mac) nor murine anti-PD1 monotherapy had a significant effect on tumor growth and overall survival. However, when co-administered the combination of both therapies resulted in significant tumor growth delay associated with prolonged survival of the mice (all mice in the combination group survived until the end of the study). All mice treated with the combination of Anti-HER2 muCAR-Mac and anti-PD1 mAb completely cleared their tumors (below).

Assessment of Tumor Burden and overall survival in a Syngeneic Mouse Model of Colon Carcinoma in response to treatment with IV CAR-M and Anti-PD-1 Therapy

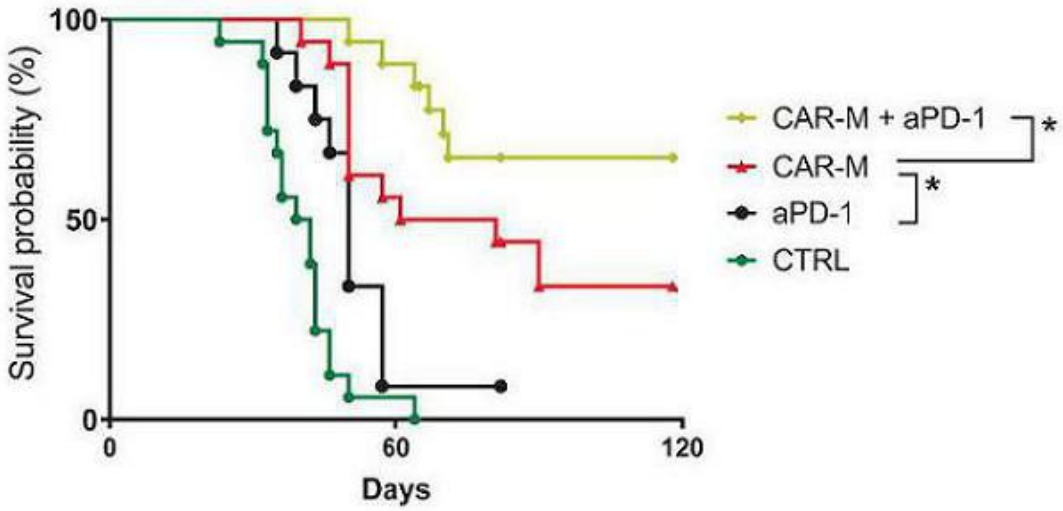


*Anti-HER2 muCAR-Mac are murine CAR-M and muUTD-Mac are untransduced murine CAR-M.

To determine the impact of Anti-HER2 muCAR-Mac and anti-PD-1 mAb combination therapy on tumor burden, tumor volumes were recorded during the treatment period (depicted in the left panel above) and mice were monitored for survival (depicted in the right panel above).

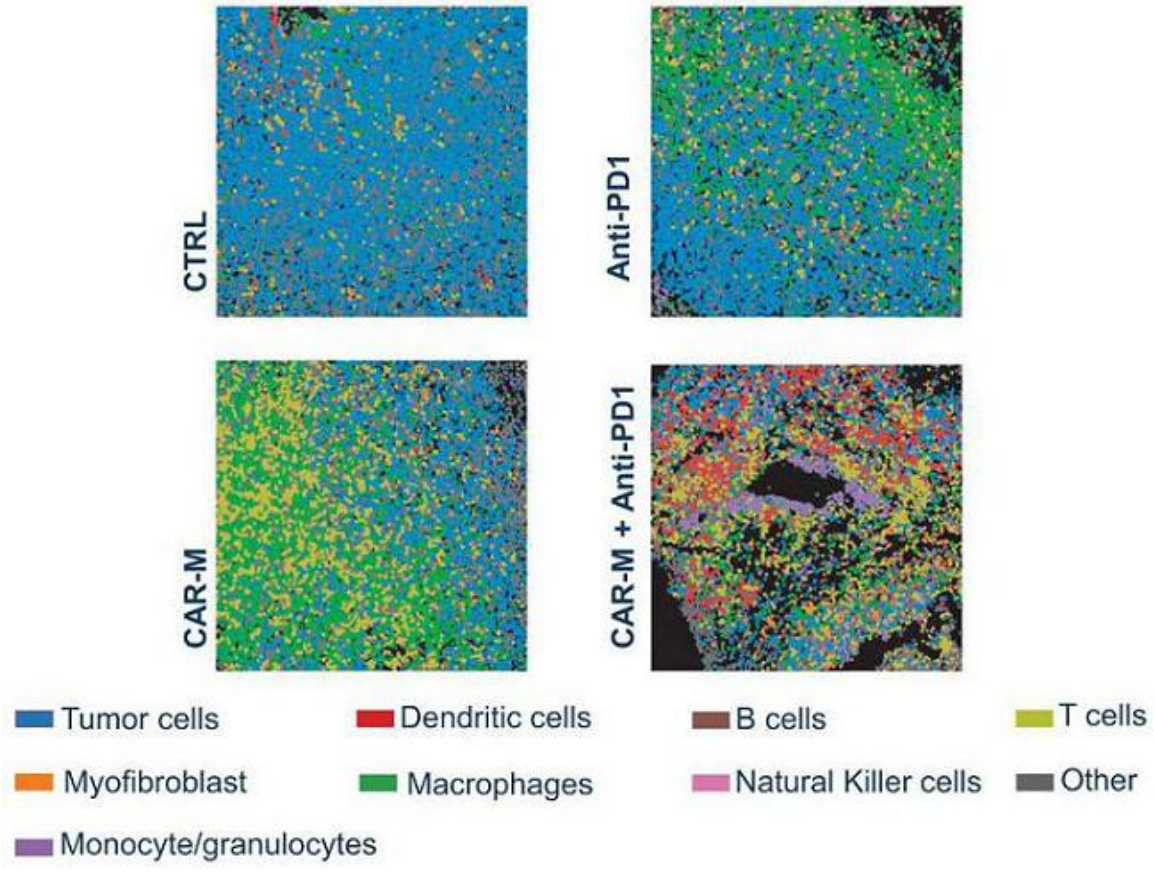
In addition to the IV CAR-M alone and in combination with anti-PD-1 therapy study described above, Carisma has performed studies with IT administered murine CAR-M. In this study, anti-PD-1 therapy was administered four times, at 3-day intervals starting 14 days post tumor inoculation (CAR-M therapy initiated on Day 15). IT murine CAR-M and anti-PD-1 therapy improved tumor control and significantly improved survival probability. Cumulative survival for all groups: 0% CR CTRL, 8.3% CR anti-PD-1, 38.9% CR CAR-M and 66.7% CR CAR-M and anti-PD-1:

IT CAR-M and Anti-PD-1 Combination Therapy Improves Survival in the CT26-HER2 Model



Analysis of immune cell populations in the TME showed that macrophages were more abundant in the CAR-M samples while other myeloid cells and DCs showed the greatest infiltration in the combination group. A significant increase in total tumor infiltrating T-cells, and in particular helper T-cells, was noted in the combination therapy.

Profound TME Modulation in Response to IT CAR-M and CAR-M +Anti-PD-1 Combination Therapy



Analysis of the TCR repertoire demonstrated that IT administration of CAR-M in combination with a PD-1 blocking monoclonal antibody led to increased frequency of T-cells in the periphery and significantly modulated the TCR repertoire in the TME suggesting enhanced adaptive anti-tumor immunity.

Based on these data, CAR-M and pembrolizumab represent a potentially synergistic immunotherapeutic combination regimen that combines CAR-M to infiltrate the TME, degrade the tumor via phagocytosis, and recruit and prime T-cells and pembrolizumab to prevent or reverse T-cell exhaustion. Patients with HER2 overexpressing tumors, such as metastatic breast cancer, gastric cancer, ovarian cancer, esophageal cancer, and others are generally poor responders to pembrolizumab. Carisma has initiated a Phase 1 clinical study to evaluate CT-0508 in combination with pembrolizumab.

Additional Pipeline Candidates

Carisma's additional pipeline candidates are CAR-M therapies that incorporate all of the core elements of its macrophage cell engineering platform, along with certain new platform enhancements that Carisma is currently developing. The CT-1119 product candidate targets the mesothelin tumor associated antigen that is found on lung cancer, mesothelioma, pancreatic cancer, ovarian cancer, and numerous other solid tumors. The CT-0729 product candidate targets the PSMA tumor associated antigen that is found on prostate cancer.

CT-1119 (Anti-Mesothelin CAR-M)

Mesothelin is a well validated tumor associated antigen. Mesothelin has been shown to be aberrantly expressed on the surface of tumor cells and plays an important role in promoting cancer invasion and proliferation. Mesothelin has been demonstrated to be expressed at high levels in mesothelioma, lung cancer, ovarian cancer, pancreatic cancer, and other solid tumors with limited expression in normal tissue, though recent data suggests inflammation may induce expression. There are no approved anti-mesothelin agents and no approved cell therapies targeting any of the solid tumor types that overexpress mesothelin. Mesothelin positive solid tumors represent a significant unmet medical need.

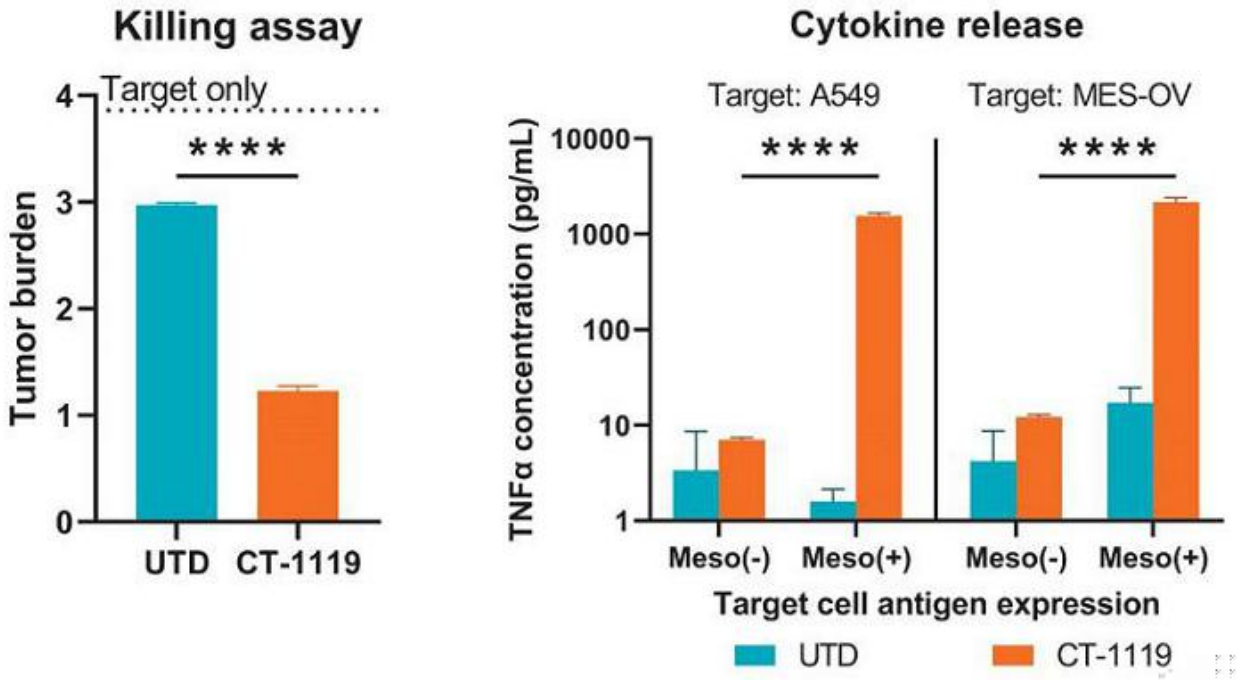
While there are no mesothelin targeted approved agents, numerous clinical trials have been conducted targeting mesothelin and safety has been established with a variety of modalities including monoclonal antibodies, antibody drug conjugates, and CAR-T-cells. Targeting mesothelin enables a similar strategy to Carisma's CT-0508 HER2 Phase 1 trial in that it enables (i) a basket trial design that includes patients with diverse tumor types and (ii) separate arms for systemic and regional administration. There is a significant opportunity for regional administration of CT-1119, including intraperitoneal administration for mesothelin positive ovarian cancer with peritoneal metastasis and intrapleural administration for patients with malignant mesothelioma and lung tumors. There is also a significant opportunity for patients with mesothelin positive solid tumors with systemic metastasis.

To develop a mesothelin targeted CAR-M, Carisma has screened anti-mesothelin scFv's using mRNA to identify humanized anti-mesothelin binders. Carisma obtained exclusive rights to a humanized anti-mesothelin scFv from the University of Pennsylvania. Carisma demonstrated that human CAR-M engineered with an Ad5f35 vector show high viability and efficiently express an anti-mesothelin (meso) CAR. Similar to CT-0508, CT-1119 adopts an M1 macrophage activation state.

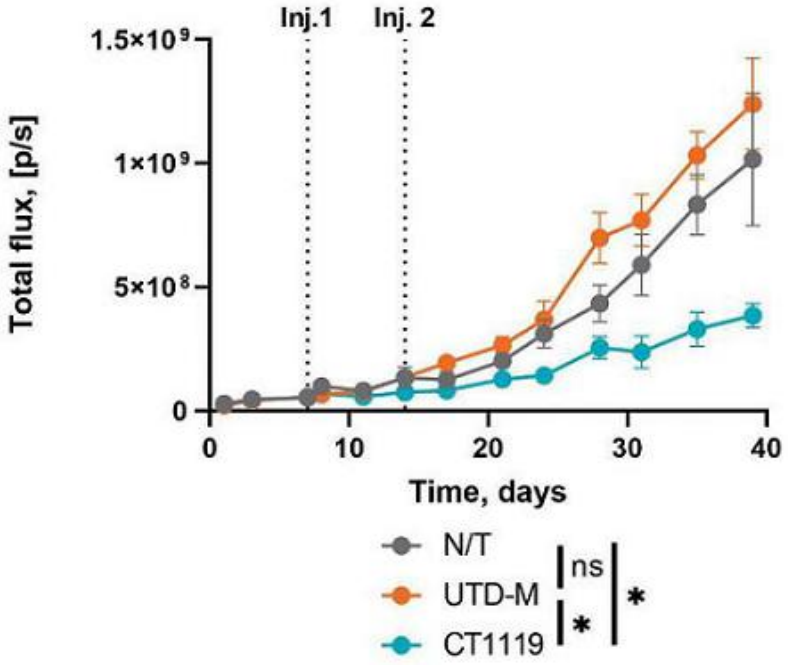
CT-1119 effectively phagocytose mesothelin positive lung cancer (A549) and ovarian cancer (MesOV) cells as shown by two independent phagocytosis assays.

To evaluate the effector function of CT-1119, Carisma utilized mesothelin positive lung adenocarcinoma (A549) and ovarian cystadenocarcinoma (MesOV) cell lines. *In vitro*, CT-1119 shows robust killing of lung cancer cells expressing mesothelin and CAR engagement induces the release of the pro-inflammatory cytokine TNF-α following stimulation with mesothelin expressing but not wild type (Wt) cell lines:

CT-1119 Kill and Produce Cytokine in Response to Biologically Relevant Targets



In order to evaluate the direct anti-tumor activity of CT-1119 in a relevant animal model, Carisma engrafted immunodeficient NSG-S mice with A549 lung adenocarcinoma cells expressing mesothelin by intravenous administration, which creates a lung metastasis model. CT1119 demonstrated the ability to reduce tumor progression and reduced the number of metastatic tumor nodules.



These findings demonstrate that CT-1119, an autologous human anti-mesothelin CAR-M, can effectively phagocytose and kill target tumor cells as well as initiate pro-inflammatory cytokine production in response to mesothelin. Carisma believes that CAR-M is a feasible approach for the treatment of mesothelin expressing solid tumors and is advancing the development of this program toward a clinical trial. CT-1119 is anticipated to be a CAR-Mono product encompassing a next generation CAR to enhance function. Carisma anticipates nominating a next generation CAR construct for CT-1119 in the first half of 2024. The IND is expected to be submitted in 2025.

CT-0729 (PSMA CAR-M)

Prostate-specific membrane antigen, or PSMA, is highly specific to prostate cancer cells. *In vitro* studies have been conducted demonstrating that Carisma can:

- Express anti-PSMA CARs on human macrophages
- Mediate phagocytosis of PSMA overexpressing tumor cells
- Induce killing of PSMA overexpressing tumor cells
- Initiate cytokine release in a PSMA specific manner
- Generate M1 polarized anti-PSMA CAR-M

CT-0729 is in the discovery stage and a lead construct has not yet been nominated.

CAR-Mono: Pre-clinical Development

Currently, the CAR-M platform requires differentiation of circulating monocytes into macrophage *ex vivo* prior to transduction with Ad5f35 to express the CAR. *Ex vivo* differentiation takes approximately one week and is associated with the loss of a fraction of cells during the differentiation process. Carisma hypothesized that monocytes could be directly engineered to express CARs, shortening the *ex vivo* manufacturing process from approximately eight days to approximately one to two days. By bypassing *ex vivo* differentiation, CAR monocytes will be administered to patients, wherein they will traffic to and enter tumor tissue, differentiating into macrophages *in vivo* rather than *ex vivo.* CAR-Mono are a precursor to the CAR macrophage. Carisma further hypothesized that CAR-Mono may have improved tumor trafficking potential, given their smaller size and increased chemokine receptor expression.

To determine the feasibility of generating CAR monocytes, or CAR-Mono, Carisma conducted *in vitro* time course studies to assess cell viability and CAR expression compared to untransduced monocytes. Following transduction with Ad5f35, CAR expression and cell viability were tracked *in vitro* for 28 days. Viability was high (>90%) and CAR expression was high (>80%), and both stayed high for the entire 28 days of culture. Durable CAR expression is critical to enable the cells to (a) retain CAR expression while trafficking to the tumor, (b) retain CAR expression during differentiation into CAR macrophages, and (c) to enable sustained anti-tumor activity.

Carisma's first CAR-Mono program is CT-0525, an autologous anti-HER2 CAR-Mono. CT-0525 is an advanced pre-clinical program, and Carisma plans to submit an IND for CT-0525 in the second half of 2023, followed by initiation of a Phase 1 clinical trial.

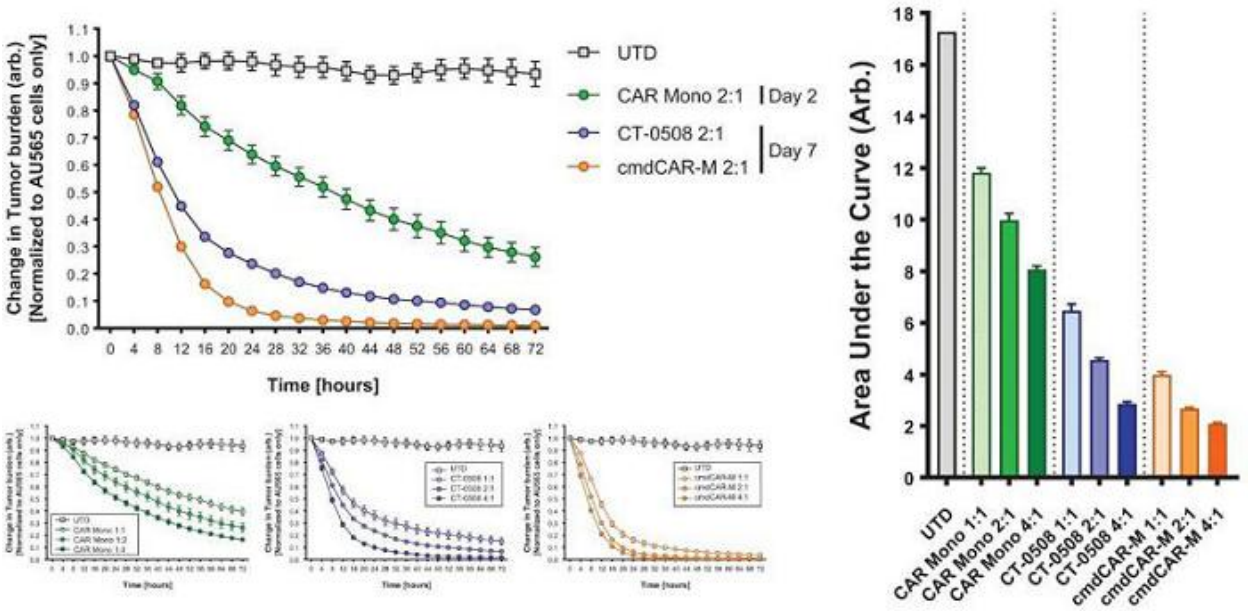
The M1 phenotype of Carisma's CAR-M platform is an important aspect of the mechanism of action. As monocytes are the precursors to macrophages, differentiation and cell morphology was evaluated after two days and seven days of culture. After seven days in culture, CAR-Mono showed a progressively increasing M1 phenotype (high CD80 and CD86 expression) and expressed CAR. Compared to untransduced monocytes cultured for two or seven days *in vitro*, Ad5f35 transduced CAR-Mono upregulated M1 markers CD80 and CD86, confirming that Ad5f35 transduction similarly induces an M1 macrophage phenotype when added at the monocyte stage. Importantly, CAR-Mono-derived CAR-M had a similar morphology to CAR-M generated using the standard method - confirming morphologically that CAR-Mono differentiate into CAR-M.

To confirm that CAR-Mono differentiate into CAR-M and take on an M1 phenotype *in vivo*, NSG-S mice were engrafted with NCI-H2444 (Non-Small Cell Lung Cancer). NSG-S mice are highly immunodeficient mice that express human Interleukin (IL)-3, human GM-CSF, and human stem cell factor. These animals support enhanced engraftment of myeloid cells compared to NOD/SCID Il2rg-/- (NSG) mice, they are ideal for studies investigating the adoptive transfer of myeloid cells. Untransduced control or CAR-Mono were intratumorally injected (N=3 donors) and tumors were harvested seven days post injection. Human immune cells were enriched using flow sorting and processed for scRNA sequencing. By comparing the gene expression of *in vivo* and *in vitro* differentiated untransduced and CAR monocytes, Carisma's data suggest that the monocytes have the potential to differentiate into macrophages and adopt an M1 like phenotype.

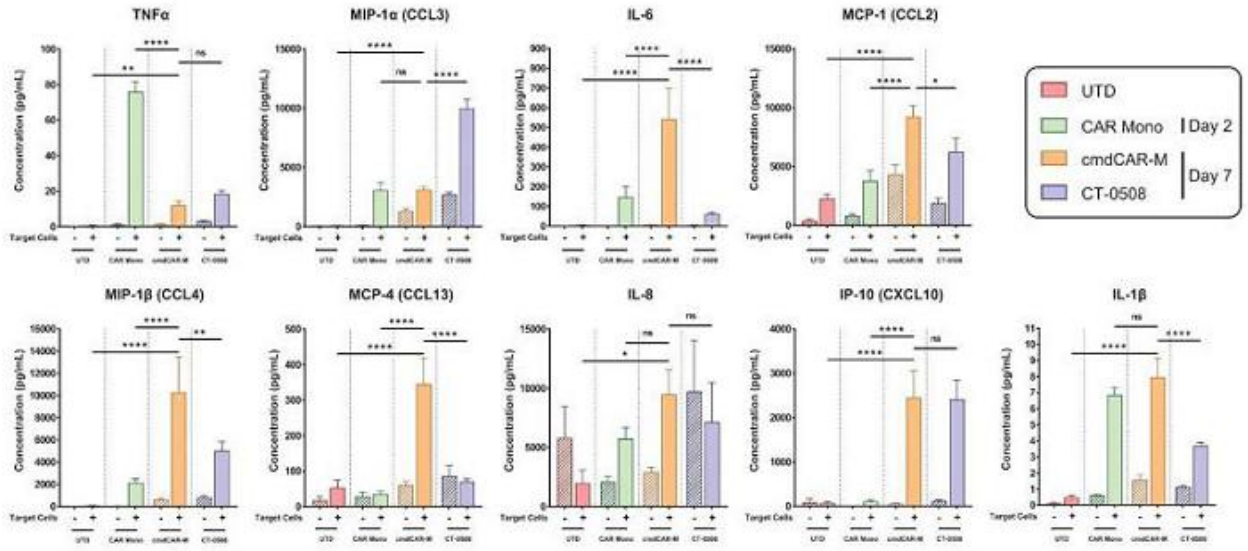
CAR-M are able to directly kill tumor cells via phagocytosis and release of cytotoxic mediators such as TNFα. Carisma evaluated the direct tumor killing capacity of CAR-Mono at Day 2 (monocyte phase) and Day 7 (macrophage phase). AU565, a HER2+ breast cancer cell line, was utilized as the target tumor cell.

Carisma's data show that CAR-Mono mediated effective killing at Day 2 and that fully differentiated CAR-Mono-derived CAR-M (Day 7) also efficiently cleared tumor cells. When comparing CAR-Mono-derived CAR-M (Day 7) to CT-0508, Carisma found that CAR-Mono led to improved tumor killing and inflammatory cytokine production.

CAR-Mono-derived CAR-M Show Robust Tumor Killing Activity

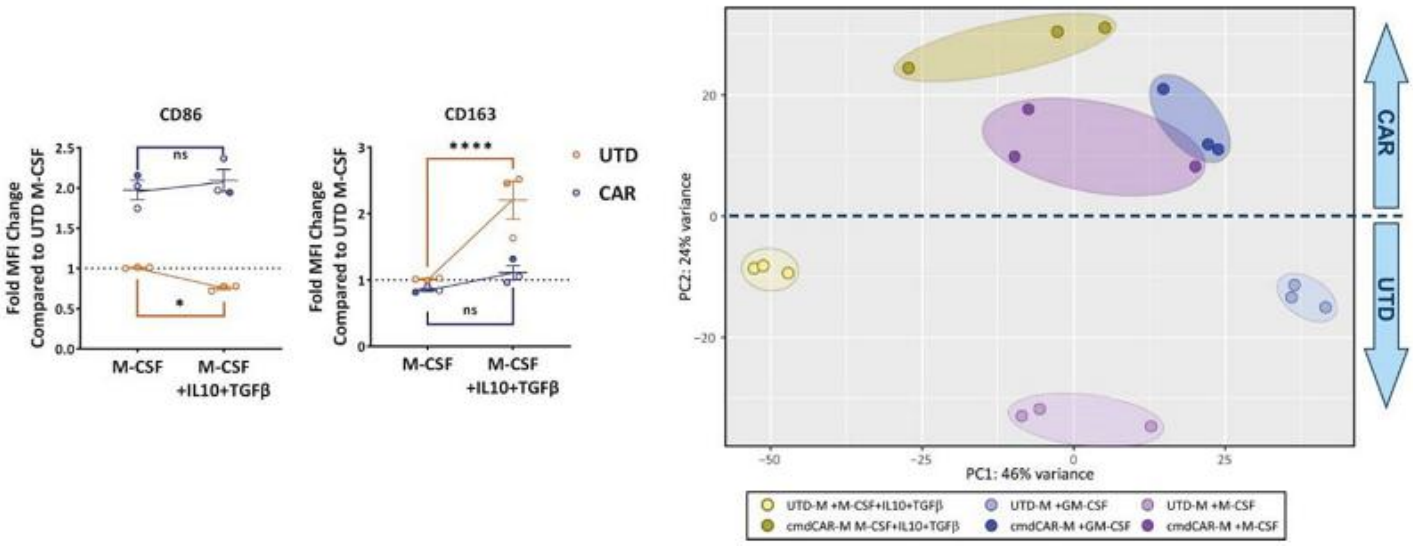


CAR-Mono-derived CAR-M Cocultures Show Robust Proinflammatory Cytokine Production



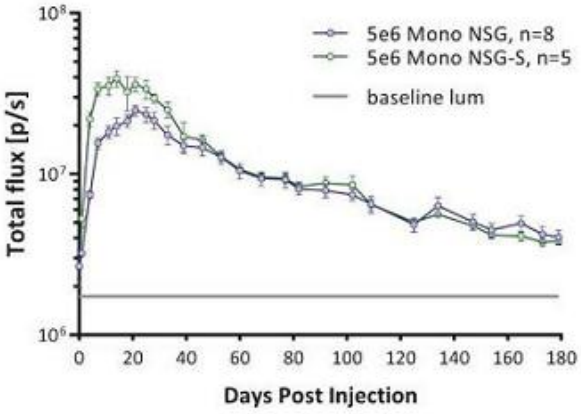
Carisma previously demonstrated that CT-0508 CAR-M are locked into an M1 phenotype by Ad5f35 transduction, and resist M2 conversion by immunosuppressive cytokines. Carisma evaluated whether CAR-Mono similarly resisted M2 environments by culturing the cells for seven days in the presence of M-CSF (differentiation factor) or M-CSF plus the immunosuppressive cytokines IL-10 and TGF-β during differentiation. CAR-Mono showed resistance to polarization and continued to express CD86 (M1) and not CD163 (M2) as demonstrated by flow cytometry and bulk RNA sequencing of untransduced and CAR-Mono-derived CAR-M. Additionally, untransduced monocytes but not CAR-Mono significantly upregulated CD163 in response to IL-10 and TGF-β.

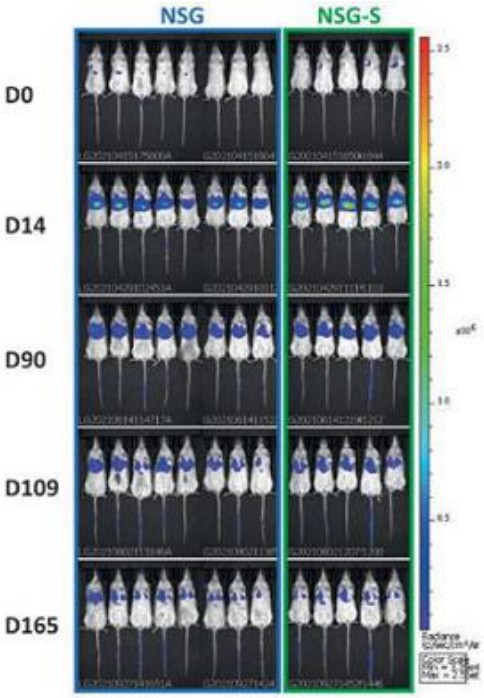
CAR-Mono Are Protected Against M2 Polarization



An important element to Carisma's cell therapies is the long-term expression of its engineered CAR payloads by human myeloid cells. To evaluate persistence *in vivo*, monocytes were engineered with a modified Ad5f35 vector that induces the co-expression of CAR and luciferase under a single promoter by using a ribosomal skip site. This approach enables the ability to track luciferase using bioluminescent imaging and infer not only the viable persistence but also the CAR expression of human monocytes in mice. Ad5f35 engineered CAR-Luciferase Mono was injected intravenously into NSG or NSG-S mice and imaged for 180 days. While both NSG and NSG-S mice are immunodeficient, only NSG-S mice constitutively express human cytokines that promote myeloid cell survival (GM-CSF, IL3, and SCF). Carisma found that human CAR-Mono persisted for at least 180 days *in vivo*, independent of cytokine support.

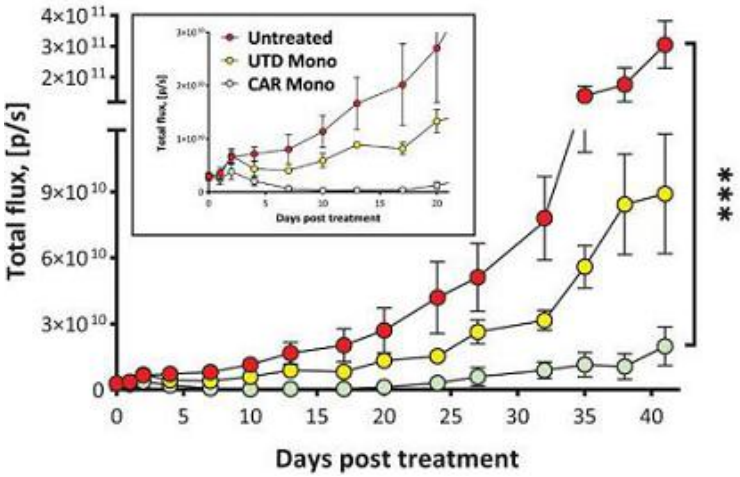
CT-0525 Show Long Term Persistence *In Vivo*

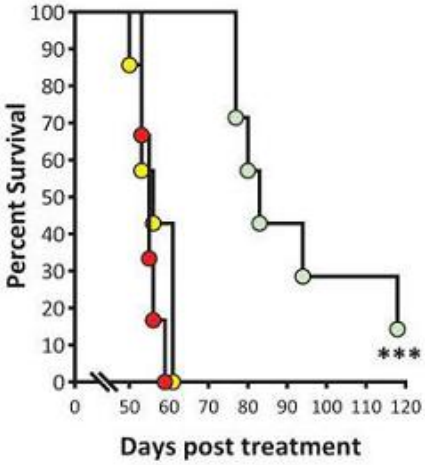




To determine whether CAR-Mono are able to control tumor growth in xenograft models, Carisma utilized a SKOV3 HER2+ ovarian cancer intraperitoneal carcinomatosis model. Anti-HER2 CAR-Mono significantly suppressed tumor growth and prolonged survival up to 120 days post treatment, while mice that received untransduced control monocytes or mice that were left untreated only survived for <60 days. Carisma is currently evaluating CAR-Mono in immunocompetent models.

CT-0525 Suppress Tumor Growth *In Vivo*





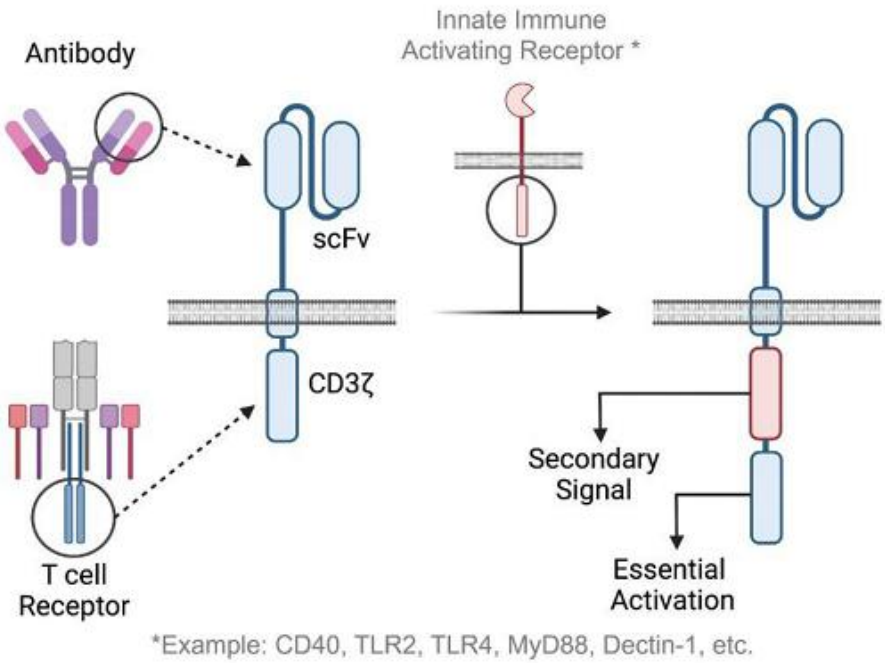
In summary, CAR-Mono were successfully generated with high efficiency and viability in a rapid, one-to-two day manufacturing process. CAR-Mono demonstrated stable CAR expression and viability *in vitro*, and persisted for at least six months *in vivo*. CAR-Mono differentiated into CAR-M efficiently and adopted an M1 macrophage phenotype, and resisted conversion to M2 in immunosuppressive environments. CAR-Mono were able to kill tumors cells in the monocyte phase and the macrophage phase. CAR-Mono controlled tumor growth in a xenograft mouse model of cancer. Based on the pre-clinical data to date, Carisma believes that CAR-Mono represents a potentially promising approach for cancer immunotherapy, while meaningfully expanding Carisma's proprietary platform.

Next Generation Constructs

Carisma's discovery team is developing a next generation CAR-M platform utilizing enhanced CAR constructs to increase potency and functionality of the engineered cells. This includes optimization of each element of the CAR itself - the binder (which gives the CAR specificity to a target antigen), the hinge (which connects the binder to the transmembrane domain and gives the CAR length and flexibility), the transmembrane domain (which spans the cell membrane), and the intracellular signaling domains (which are responsible for activation of immune cell function). It is well accepted in the immunology field that T-cells require multiple signals for activation - signal 1 deriving from the TCR, and signal 2 deriving from co-stimulatory receptors such as CD28 or 4-1BB. Thus, all approved CAR-T products are second generation CARs, incorporating CD3ζ as a primary signaling domain and either 4-1BB or CD28 as co-stimulatory domains. Third generation CARs, incorporating three signaling domains, have also been evaluated in T-cells. Unlike T-cells, macrophages do *not* require co-stimulation for activation and can be activated through a single signal, such as through an Fc receptor. However, multiple signaling pathways have the ability to enhance the macrophage response and may improve target-cell killing, cytokine/chemokine release, and macrophage activation.

Next Generation CAR-M Constructs

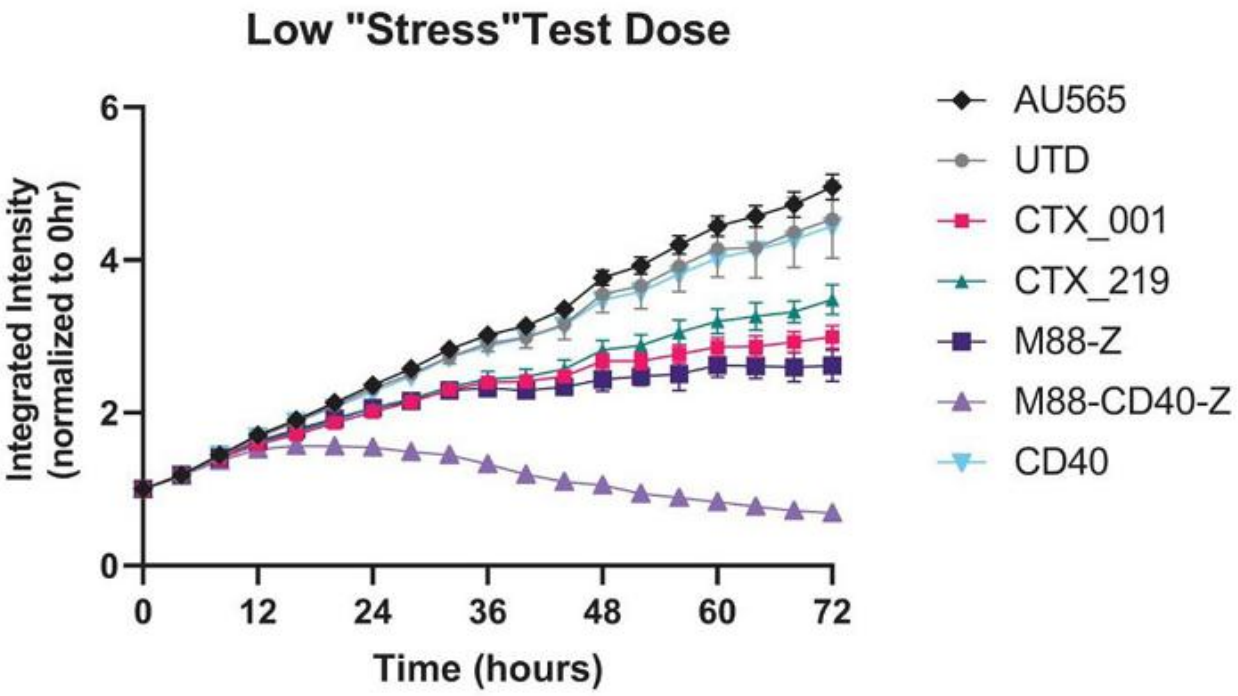
Carisma has been routinely developing and evaluating novel CAR-M constructs. Carisma's well-established CAR-M assays enable a distinct opportunity to identify improved constructs in an efficient manner. Based on Carisma's early findings, CD3ζ is a potent activator of macrophage function and induces phagocytosis, cytokine release, chemokine release, killing, and activation of pro-inflammatory genes. Given this finding, Carisma has been evaluating the addition of other innate immune receptors such as Toll-like receptors, CD40, MyD88, Dectin-1, to CD3ζ to improve upon CAR-M functionality.



Next Generation Construct: Pre-clinical Development

Carisma's preliminary data assessing tumor cell killing activity with CAR variants at a low "stress test" dose shows increased potency at low effector (macrophage) to target (tumor cell) ratios. CD40 is an activating receptor found on antigen presenting cells including macrophages that is activated after binding to CD40-Ligand, typically expressed on activated T-cells. CD40 signals through numerous second messengers leading to the activation of NF-κB and other transcription factors that induce a potent M1 phenotype and activate antigen presenting cells. MyD88 is expressed in macrophages and acts as an adaptor that plays a pivotal role in the signaling of Toll-like receptors. Carisma has found that addition of MyD88 and CD40 to CD3ζ CAR-M, in a specific sequence with a specific hinge domain, leads to a significant improvement to macrophage anti-tumor activity.

Addition of the MyD88/CD40 pathway significantly increases CAR-M potency

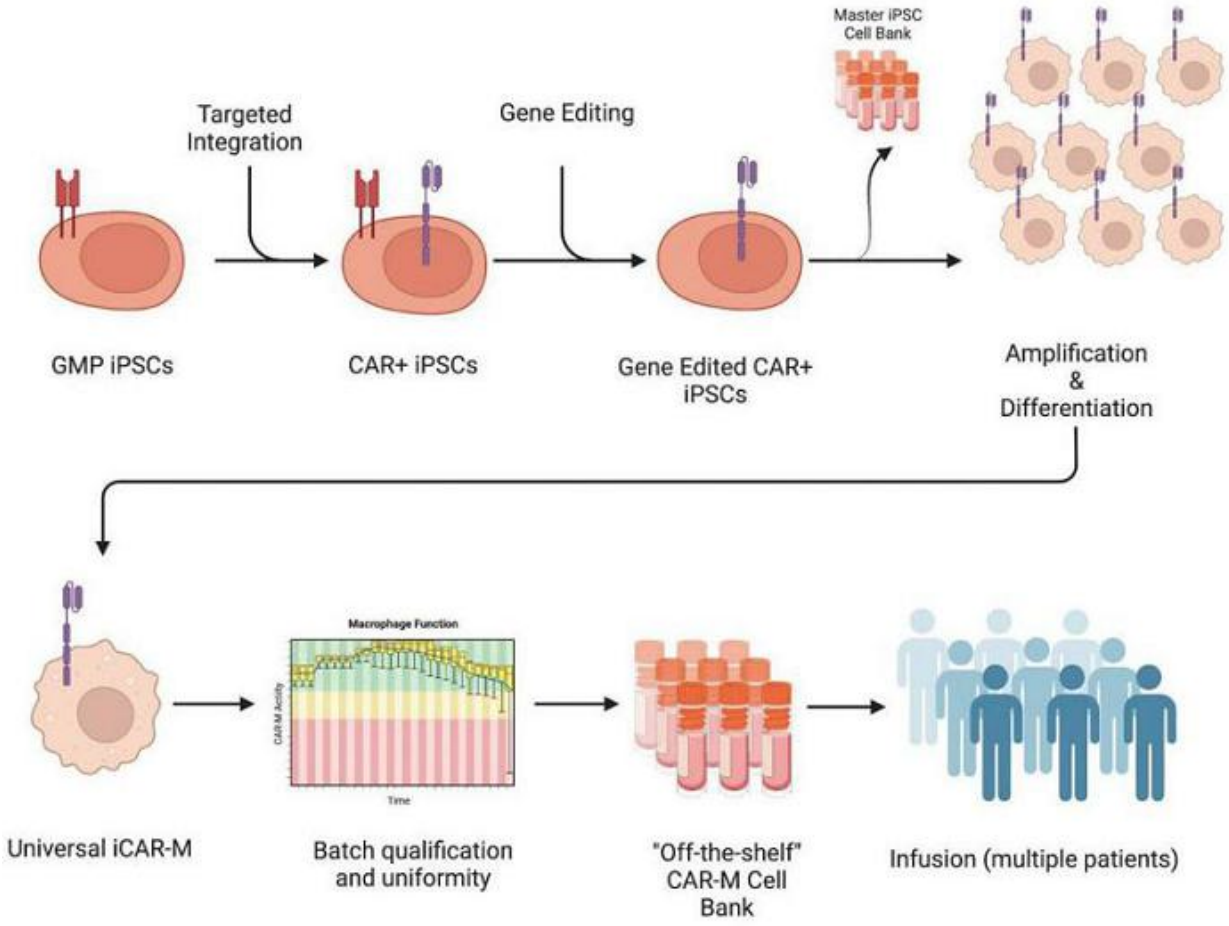


Further testing of the M88-CD40-CD3ζ CAR and other novel CAR-M are ongoing. Leading second/third generation CAR candidates may be incorporated into future autologous, allogeneic, or *in vivo* LNP programs.

Novel Modalities

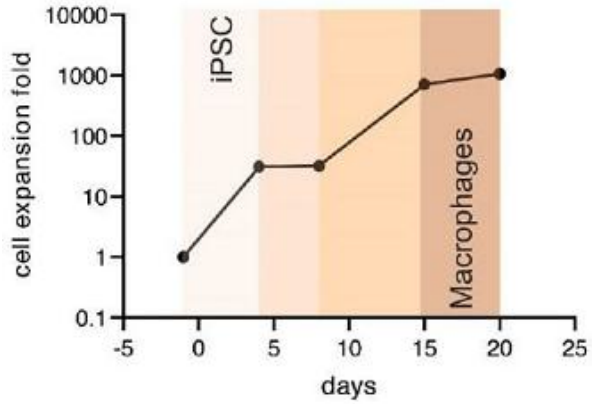
Carisma is applying learnings from its autologous CAR-M data, tools, and processes to establish off-the-shelf engineered macrophage therapeutics. To broaden the application of CAR myeloid cell therapy, Carisma is actively seeking to develop a gene edited iPSC-derived macrophage platform. The goal is to establish a process to generate allogeneic, iPSC-derived M1, M2, or CAR myeloid cells. One approach is using allogeneic iPSC myeloid cells manufactured using the following summary process:

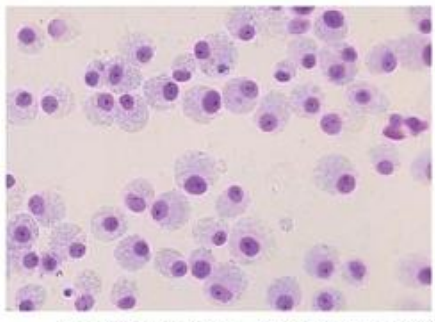
iPSC-Derived Myeloid Cells: Summary



Initial *in vitro* studies show that iPSCs can be converted to monocytes or macrophages, skewed to an M1 or M2 phenotype with cytokine culture, and can be engineered with Carisma's proprietary vectors to express tumor targeting CARs. In addition to offering an allogeneic, universal donor platform, iPSCs are expandable cells - unlike primary human monocytes or macrophages which are terminally differentiated. In the first 15 days of the process, Carisma noted >1,000x expansion. It took approximately 15 days to generate iPSC-derived monocytes and approximately 20 days to generate iPSC-derived macrophages. The process is currently being performed in a non-GMP research environment at research scale but has the potential to be developed into a commercial scale, GMP process in the future. The macrophages generated with this process express canonical macrophage markers, appear macrophage-like with Giemsa staining and microscopic evaluation, and importantly demonstrate cell-to-cell uniformity in morphology.

iCAR-M Production



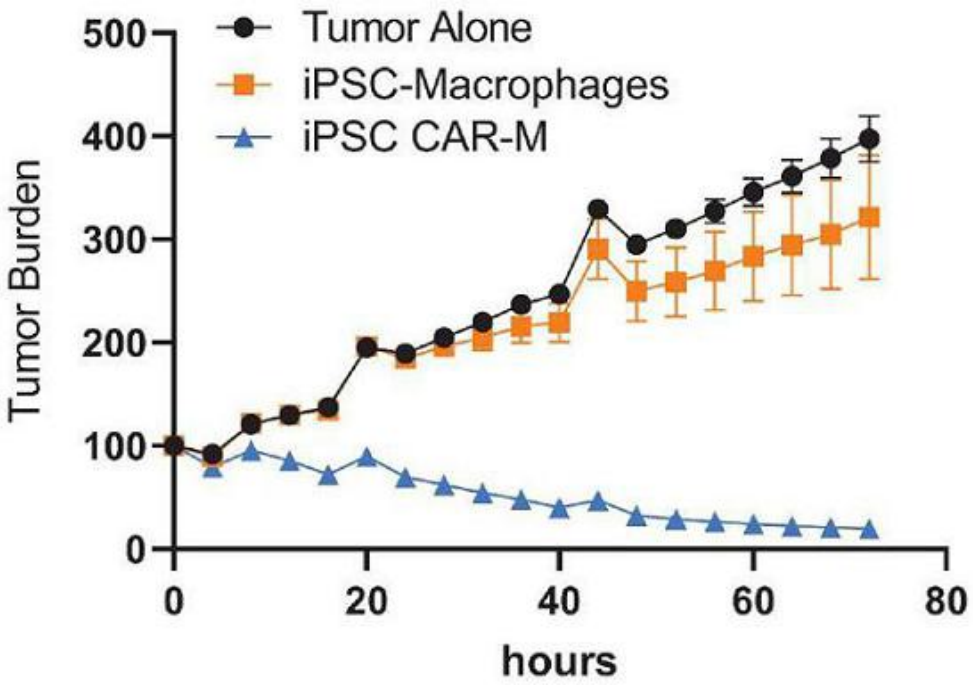


GIEMSA staining, EVOSXL core 40X

iCAR-M Anti-Tumor Activity

In order to confirm that iPSC-derived macrophages are effectively redirected against tumor associated antigens, Carisma introduced the anti-HER2 CAR into iPSC-derived macrophages using Ad5f35. Engineered iPSC-derived macrophages efficiently expressed CAR, upregulated M1 markers, and demonstrated an acceptable viability. To evaluate anti-tumor function, Carisma conducted an *in vitro* killing assay in which AU565 HER2+ breast cancer cells were cultured alone, together with iPSC-derived control macrophages, or iPSC-derived CAR-M. As shown below, while the control iPSC macrophages had minimal anti-tumor effect (orange), the iPSC-derived CAR-M cleared tumor cells over approximately 72 hours.

iPSC-Derived CAR-M Exert Potent Anti-Tumor Activity



While iCAR-M appear to be able to exert direct anti-tumor functionality, there are inherent complexities that will be critical to inform the ultimate allogeneic macrophage strategy. CAR-M exert anti-tumor immunity through tumor infiltration, phagocytosis, cytokine/chemokine release, TME activation, T-cell recruitment, and antigen presentation. To enable an allogeneic off-the-shelf iCAR-M program, the cells will inherently be either MHC mismatched or MHC-edited (for example, MHC-I and MHC-II may be deleted using CRISPR/Cas9 editing to generate universally accepted macrophages), and thus may have limited direct antigen presentation potential. However, iCAR-M are expected to maintain the other mechanisms of action, as summarized below. Future studies will evaluate whether allogeneic CAR-M are capable of inducing epitope spreading, as indirect mechanisms of antigen presentation have not been ruled out.

Importantly, the iPSC-derived myeloid cell platform, combined with Carisma's gene engineering capabilities, has the potential to be produced in multiple ways. First, iPSC-derived myeloid cells can be expanded, qualified, and banked prior to being used as a master cell bank source for the production of engineered myeloid cell therapies. In this example, iPSC-derived myeloid cells would be engineered with Carisma's proprietary methods (Ad5f35, Vpx-LV, modified mRNA, or other) after differentiation into the desired myeloid cell subtype. Alternatively, Carisma is optimizing methods to introduce the CAR (or other genetic payload) at the iPSC stage using targeted integration into desired genomic loci, isolating iPSC clones with integrated genes and additional potential genetic edits, and differentiating these cells into monocytes or macrophages, and skewing them to an M1 phenotype using Carisma's proprietary polarization processes. For this approach, care must be taken to ensure that the CAR (or other payload) is not epigenetically downregulated or lost during the myeloid differentiation process.

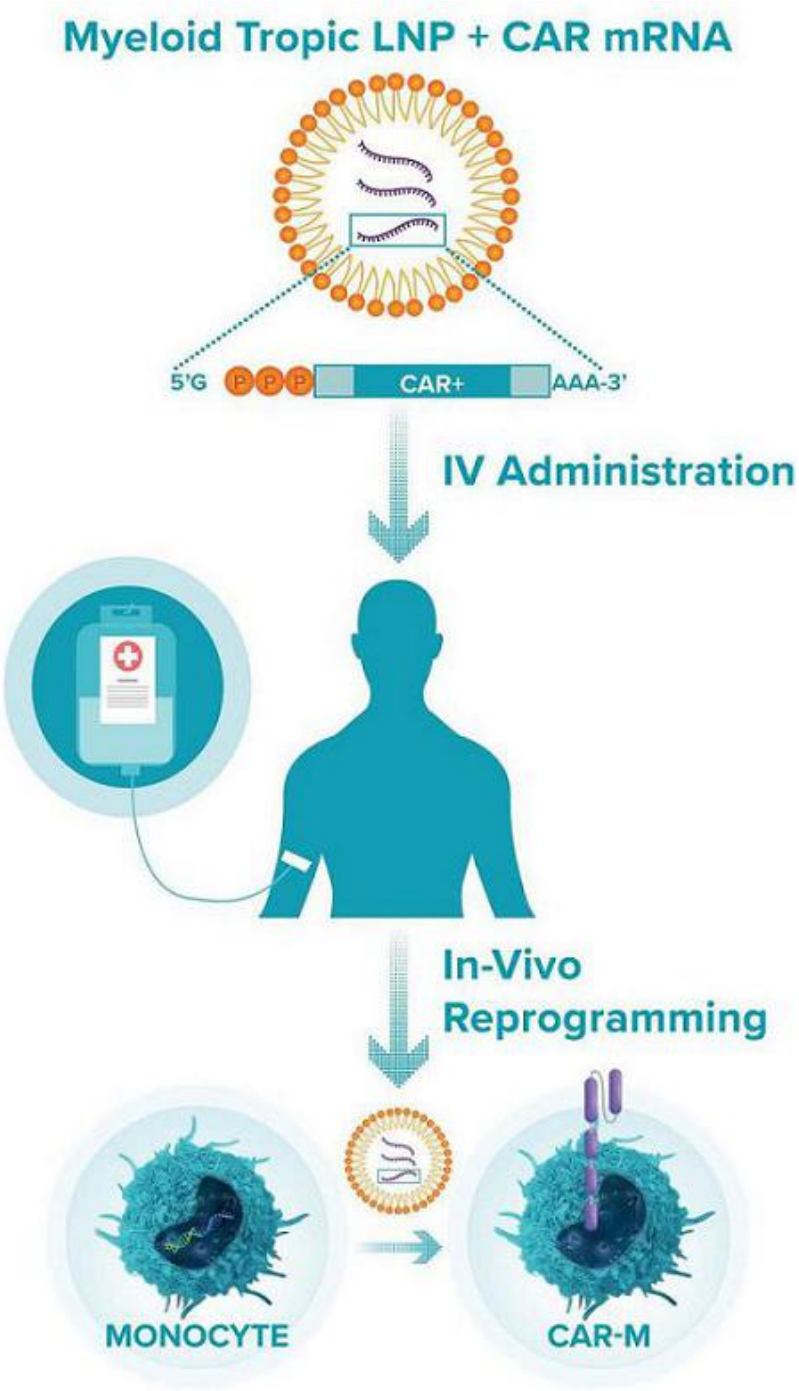
While the current focus of Carisma's discovery efforts is to ultimately generate iCAR-M, the platform is expected to be readily adaptable to either develop (a) myeloid cells engineered with other anti-tumor payloads, or (b) myeloid cells engineered with payloads designed to ameliorate disease outside of oncology. Notably, Carisma has early non-oncology programs in liver fibrosis, neurodegeneration, and auto-immunity/chronic inflammation which can be combined with the iPSC-derived myeloid cell platform. Currently, Carisma's pipeline is focused on autologous approaches and direct *in vivo* reprogramming, and the allogeneic iPSC-derived platform is at the pre-clinical discovery stage.

LNP/mRNA Platform (Moderna Collaboration)

In collaboration with Moderna, Carisma is developing an mRNA based *in vivo* CAR-M platform for oncology. This approach is highly differentiated in the cell therapy space - not only because it relies on myeloid cells as the engineered effectors, but also because it utilizes direct *in vivo* reprogramming of a patients' own cells with a well-validated LNP/mRNA platform. By engineering a patients' own cells directly within their body, *ex vivo* autologous or allogeneic cell manufacturing is entirely bypassed - significantly increasing the commercial potential of the therapy. Importantly, while this approach enables an off-the-shelf therapy, the engineered cells are autologous, as it is the patients' own cells being engineered into CAR-M *in vivo*, or directly within their body. This strategic partnership enables Carisma to apply the learnings gleaned from autologous CAR-M development to expand its pipeline to up to 12 additional oncology candidates.

Studies with the myeloid tropic LNP have shown mRNA delivery is specific for myeloid cells (monocytes, macrophages, dendritic cells). Based on clinical data using other (non-CAR) payloads, Moderna has previously demonstrated that the LNP was well-tolerated after systemic administration and could furthermore be re-dosed. Preliminary data have demonstrated that the LNP is efficient in transfecting myeloid cells *in vitro* and *in vivo*. In addition, preliminary data confirms high CAR expression, viability, and CAR-M function. The platform summary for the *in vivo* CAR-M approach is shown below:

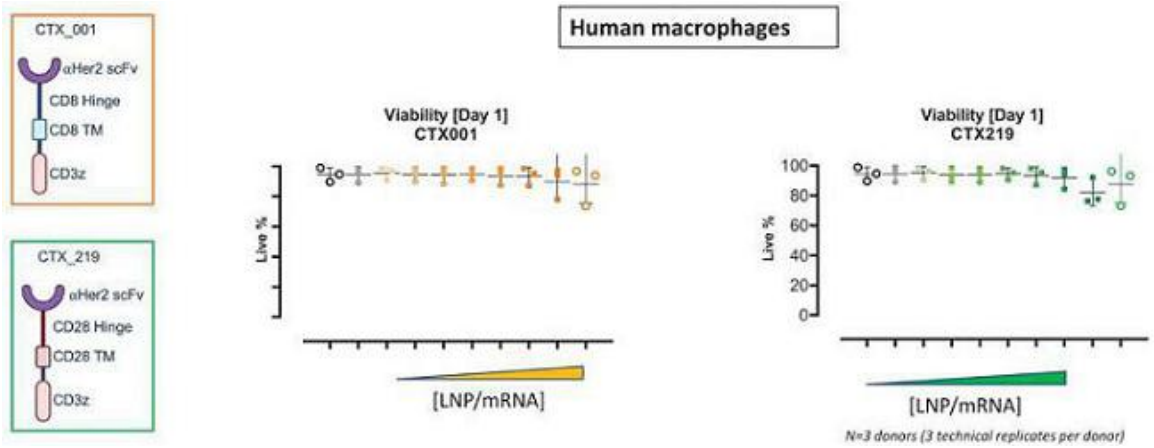
Myeloid Tropic LNP/mRNA Platform (Moderna Collaboration)



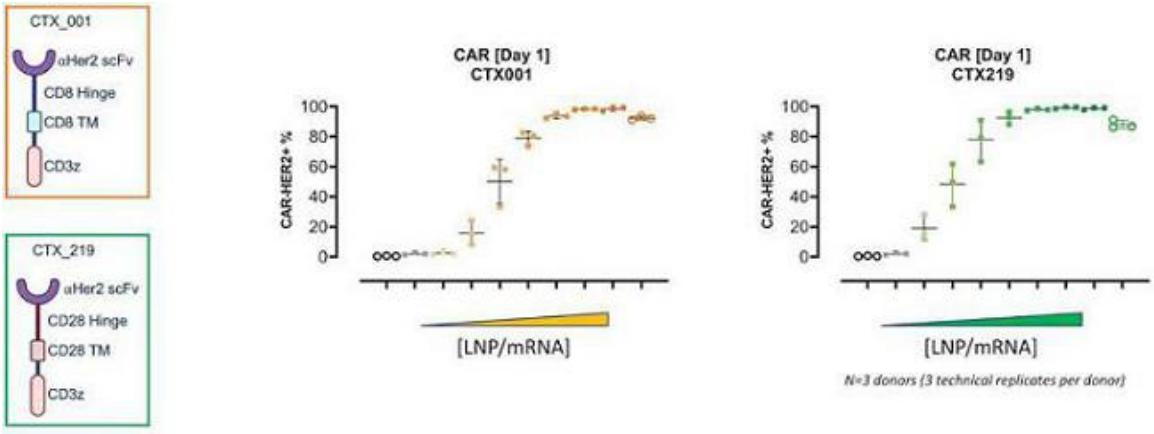
LNP/mRNA Pre-clinical Data (Moderna Collaboration): Pre-clinical Development

In vitro pre-clinical studies with the myeloid tropic LNP/mRNA platform have shown efficient transfection. Carisma has optimized conditions for *ex vivo* LNP/mRNA delivery to human and murine monocytes/macrophages, as well as primary murine myeloid cells to establish various relevant murine tumor models. Carisma's goal was to establish a platform with high viability (>70%), high transfection efficiency (>70%), and significantly increased CAR-M killing activity compared to untransfected control macrophages. Key data for the anti-HER2 CAR constructs CTX_001 and CTX_219 are shown in the figures below:

LNP Transfection is Well Tolerated by Human Macrophages

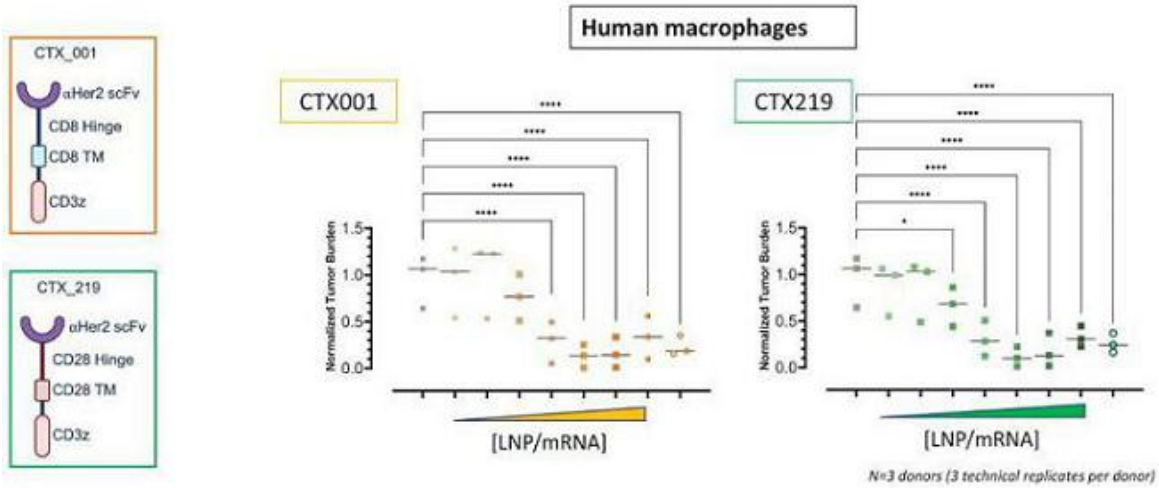


LNP Engineering leads to Dose Dependent CAR Expression



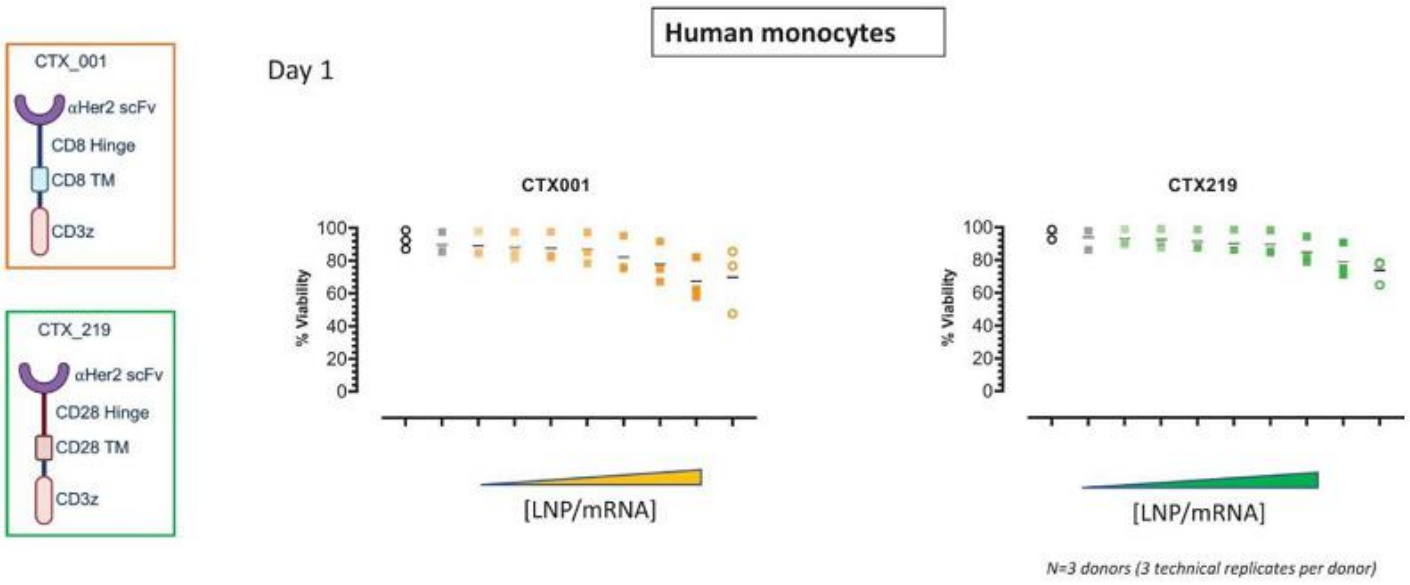
In addition to CAR expression and viability, Carisma has shown that one day post transfection, CTX001 and CTX219 mediate potent killing activity against target AU565 cells.

LNP Engineered CAR-M Display Effective Killing Function

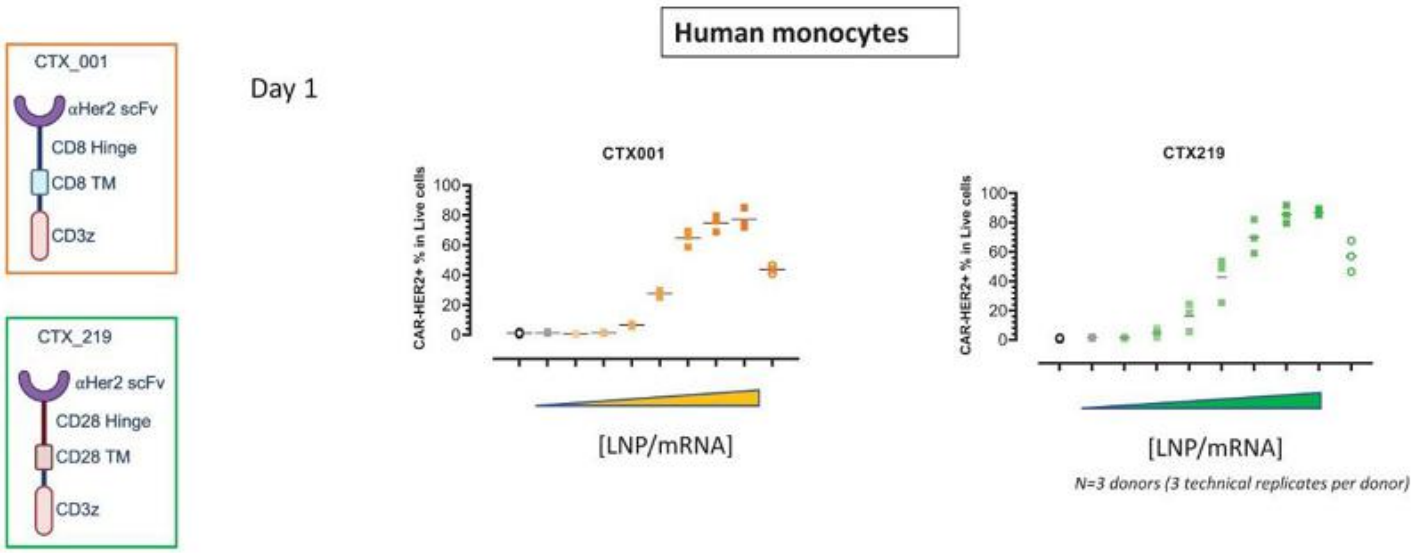


Statistical analysis was determined using Two-way ANOVA, * p<0.5 **** p<0.0001. The data were generated from N=3 donors (3 technical replicates per donor).

LNP Transfection is Well Tolerated by Human Monocytes

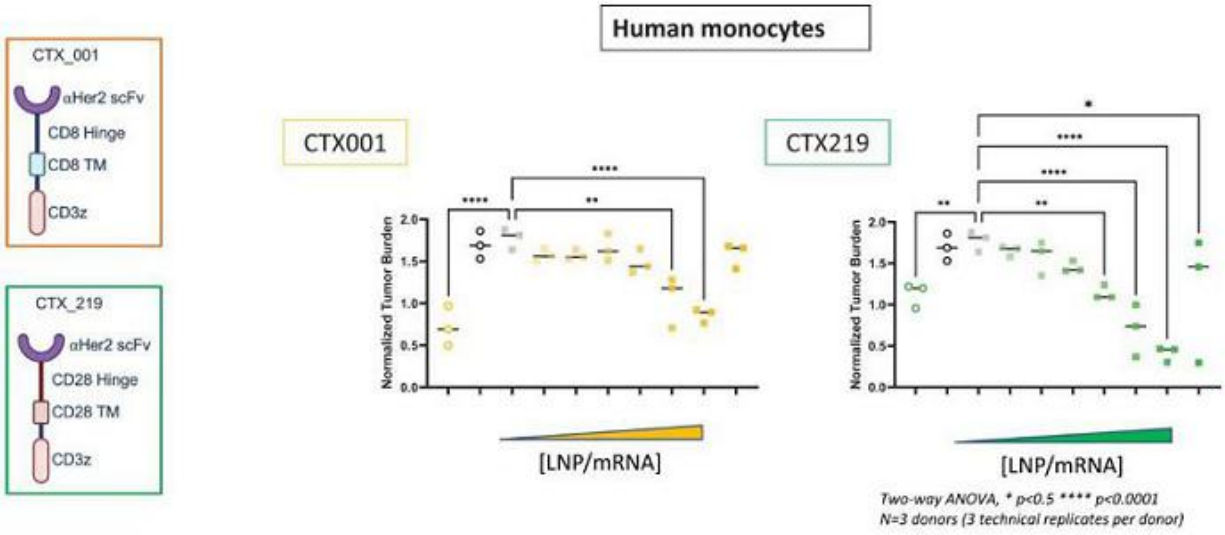


LNP Engineering leads to Dose Dependent CAR Expression in Monocytes



In addition to CAR expression and viability, Carisma has shown that monocytes engineered with LNP/mRNA encoding the CARs CTX001 and CTX219 mediate potent killing activity against target AU565 breast cancer cells. These findings demonstrate similarity between LNP engineered macrophage and monocyte effector function.

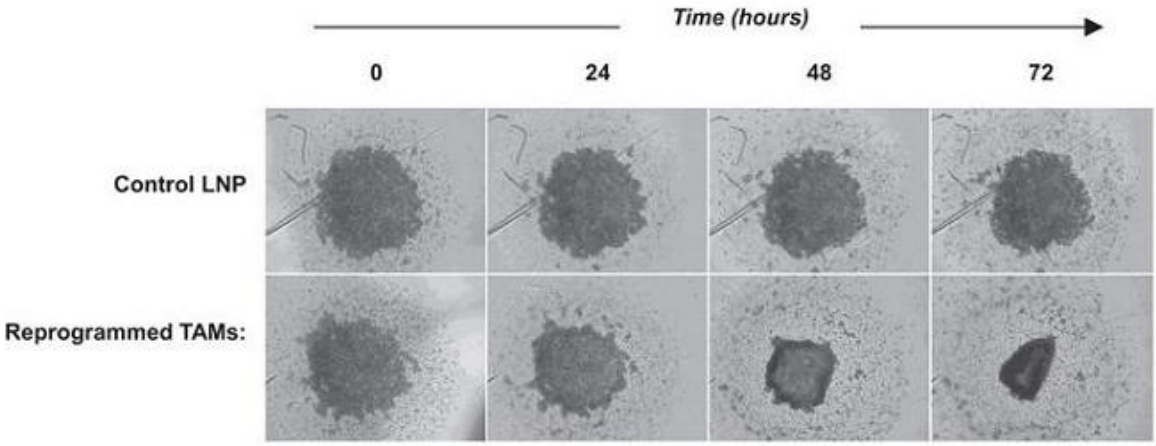
LNP Engineered CAR-Mono Display Effective Killing Function



Statistical analysis was determined using Two-way ANOVA, * p<0.5 **** p<0.0001. The data were generated from N=3 donors (three technical replicates per donor).

To model direct reprogramming of TAMs to CAR-M, Carisma generated tumor spheroids comprised of HER2+ breast cancer cells and human TAMs. Carisma confirmed that the macrophages embedded within these spheroids adopted an M2, TAM-like phenotype. Carisma added LNPs (containing CAR mRNA and an M1 polarizing gene) directly to the tumor spheroids and found that the reprogrammed TAMs mediated tumor spheroid shrinking over a 72-hour period.

Directly Reprogramming Myeloid Cells *within Tumors* with LNP/mRNA



The first four indications have been nominated by Moderna, spanning both solid tumors and hematologic malignancies. Pre-clinical platform optimization, as well as target discovery and CAR development, are ongoing in parallel. Early *in vivo* proof of concept is expected in 2023.

EM-C: A novel platform for regulation of inflammation

Cytokines in tissue microenvironments regulate the balance between pro- and anti-inflammatory signaling. Dysregulated cytokine expression causes deleterious immunosuppression or inflammation, underpinning the pathophysiology of numerous diseases. As examples, anti-inflammatory cytokines in solid tumors suppress immune activation and safeguard the tumor, whereas pro-inflammatory cytokines in rheumatoid arthritis drive chronic inflammation. Rebalancing inflammation/immunosuppression by targeting aberrant cytokine signaling offers a generalizable approach to treating many diseases, but systemic cytokine blockade carries risks such as increased risk of serious infection. Cellular immunotherapies may offer a localized platform that could activate in response to cytokines then proportionately remodel the microenvironment's inflammatory state as needed.

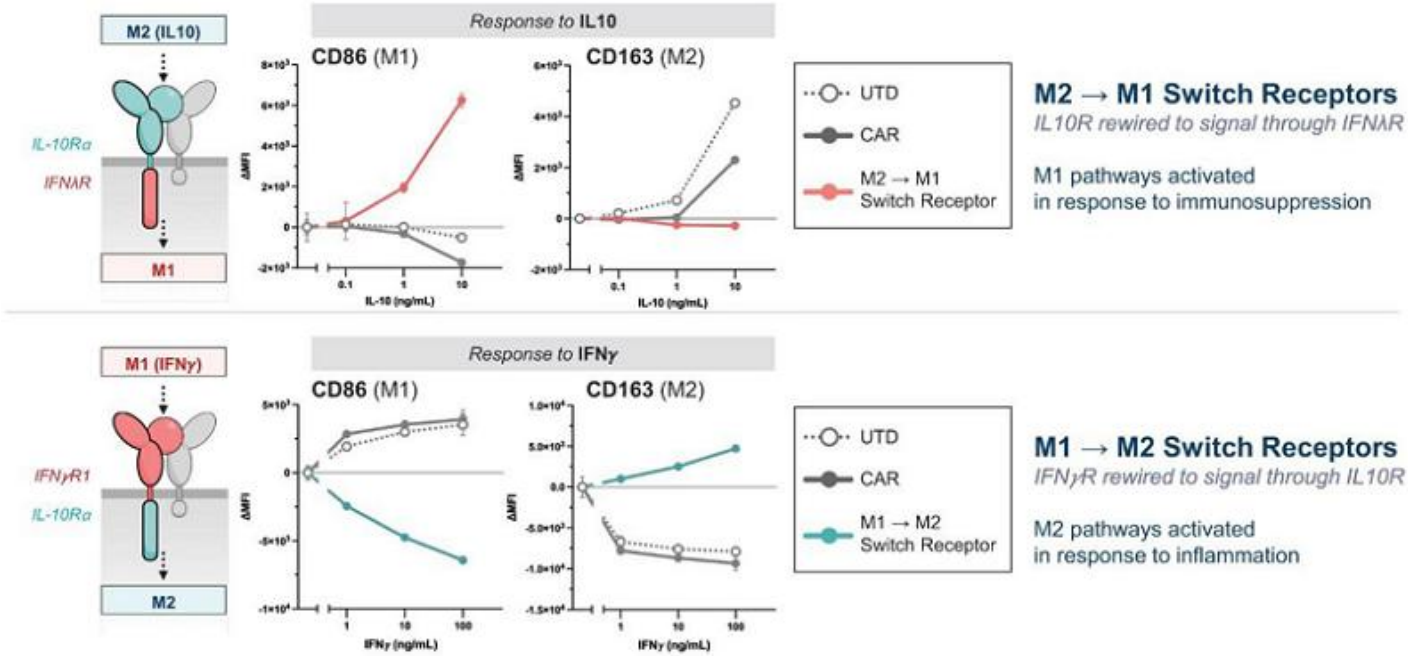
Macrophages are tissue infiltrating homeostatic regulators responsible for the initiation and resolution of inflammation. Carisma leveraged the ability of macrophages to regulate inflammation by generating macrophages that express genetically engineered, synthetic cytokine switch receptors (SR). Carisma termed this platform EM-C and evaluated its modular ability to convert immunosuppressive M2 signals into pro-inflammatory M1 responses for solid tumor microenvironment conversion, or vice versa for the conversion of pro-inflammatory M1 signals into immunosuppressive M2 responses for auto-immune or inflammatory diseases.

EM-Cs were generated by expressing SRs in primary human macrophages. First, Carisma generated SRs that convert immunosuppressive signals into inflammatory signals - focusing on IL-10. To convert IL-10 (a cytokine well known to polarize macrophages toward an M2 phenotype) in the TME into a pro-inflammatory signal, an IL-10 SR was designed by fusing the extracellular domain of the IL-10 receptor to an engineered portion of the IFNλ receptor. The *in vitro* response of IL-10 EM-Cs to IL-10 was monitored by the expression of M1 and M2 markers. While control untransduced or CAR (a control irrelevant construct) expressing macrophages responded to IL-10 through the downregulation of M1 markers and upregulation of M2 markers, IL10-SR EM-Cs upregulated M1 markers and downregulated M2 markers. These data and others demonstrate that Carisma's IL10-SR EM-Cs can induce an inflammatory response when exposed to immunosuppressive conditions. Carisma has generated numerous additional EM-Cs that respond to other immunosuppressive factors, such as TGFβ.

Conversely, Carisma sought to develop EM-Cs that can convert inflammatory cytokines into anti-inflammatory responses. As myeloid cells are recruited to sites of inflammation. This approach would enable a myeloid cell therapy that accumulates at inflammatory sites and locally shuts down inflammation. This approach may have broad utility in autoimmunity, chronic inflammation, fibrosis, transplant, and graft versus host disease. Carisma generated EM-Cs targeting IFN-γ and demonstrated that while control untransduced or CAR (an irrelevant payload) macrophages respond to IFN-γ by upregulating M1 markers and downregulating M2 markers, IFN-γ SR EM-Cs responded to IFN-γ by downregulating M1 markers and upregulating M2 markers. These data demonstrate that Carisma's proprietary EM-C platform can be broadly utilized to generate engineered macrophages with the ability to control the inflammatory nature of environments, and act as living converters, with broad potential applicability to oncology, autoimmunity, chronic inflammation, and other indications. This platform offers broad opportunity for strategic partnership.

Macrophages Expressing Cytokine Switch Receptors Can Invert

Pro- or Anti-Inflammatory Signals



Indications Beyond Oncology

While Carisma is an oncology focused company, the macrophage engineering platform Carisma has established offers broad opportunity to develop cell therapies for indications beyond oncology. Carisma has numerous early-stage research programs designed to produce development candidates for liver fibrosis, neurodegenerative disease, and autoimmunity/chronic inflammation. Carisma's new product candidates will incorporate all the core elements of its macrophage cell engineering platform, plus certain indication specific modifications uniquely designed to address the pathology of each indication. While autologous cell therapy may be utilized for proof of concept, these indications have the potential to be combined with Carisma's allogeneic or off-the-shelf therapeutic approaches. Indications beyond oncology offer opportunities for strategic partnerships to accelerate the development of these programs.

Manufacturing and Delivery

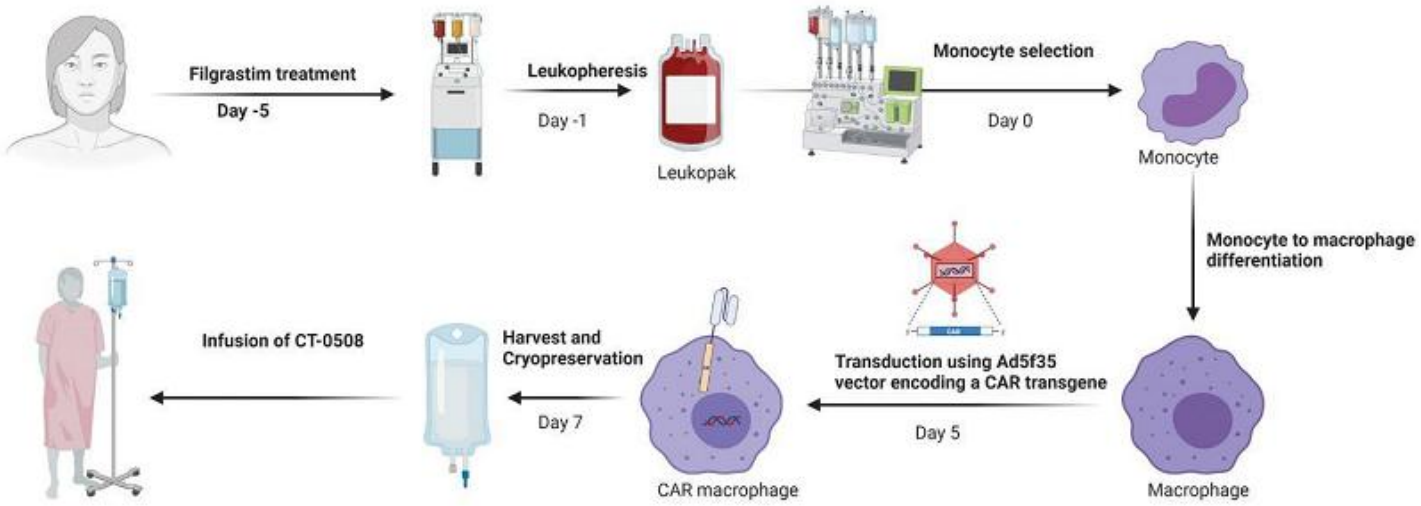
Carisma does not own or operate, and currently has no plans to establish, any manufacturing facilities. Carisma currently relies on and expects to continue to rely on third-party contract development manufacturing organizations, or CDMOs, for the manufacturing and release testing of viral vectors and cell drug products. Carisma also currently relies on third parties for patient leukapheresis material logistics as well as to package, label, store, and distribute the cell drug products.

Carisma has established and will continue to establish arrangements with contract manufacturers to supply clinical materials and manufacturing capabilities for Carisma's clinical trials. Carisma currently obtains its supplies from these manufacturers on a purchase order basis and does not have long-term supply arrangements in place. Should any of these manufacturers become unavailable to Carisma for any reason, Carisma believes that there are several potential replacements, although Carisma may incur some delay in identifying and qualifying such replacements.

Carisma also plans to continue to expand the scope and number of its collaborations to further develop its manufacturing capabilities and to minimize manufacturing risk. As Carisma scales to commercialization, it expects to increase its capacity with its current suppliers and evaluate other options to secure commercial scale capacity.

Manufacturing Process for CT-0508

A CDMO is used to produce cGMP lots of viral vector. The CT-0508 drug substance process begins by isolating the monocyte population from a single fresh patient leukopak mobilized by donor pretreatment with filgrastim. The resulting monocytes are cultured in the presence of a cytokine and other factors to induce differentiation into macrophages. The resulting macrophages are then transduced with the Ad5f35 vector encoding an anti-HER2 CAR. The resulting cells are then harvested as drug substance. Macrophages derived from a single leukopak from one patient comprise one batch of CT-0508. Final formulation is performed and transferred into freezing bags to generate drug product. The drug product is carefully frozen in a controlled process and then placed into secured storage and maintained at a temperature of $\leq$-135^{o} Celsius. Safety and specification tests are performed and if found acceptable the product is released and shipped to clinical trial sites. The current process from receipt of leukopak to drug product and cryopreservation is eight days.



Carisma plans to continue to invest in process improvements to reduce the overall manufacturing process time and improve costs for the viral vector and cell drug product.

Intellectual Property

Carisma strives to protect and enhance its proprietary technology, inventions and improvements that Carisma believes are commercially important to the development of its business, including through seeking, maintaining and defending patent rights, whether developed internally or licensed from third parties. Carisma also intends to rely on trade secrets related to its proprietary technology platform and its know-how, continuing technological innovation and in-licensing opportunities to develop, strengthen and maintain its proprietary position in the fields of cancer and other indications including those related to neurodegeneration, liver fibrosis and autoimmune disease, which may be important for the development of Carisma's business. Carisma additionally may rely on regulatory protection afforded through data exclusivity, market exclusivity and patent term extensions, where available.

Carisma's commercial success may depend, in part, on its ability to obtain and maintain patent and other proprietary protection for commercially important technology, inventions and know-how related to its business, defend, and enforce its patents, preserve the confidentiality of its trade secrets and operate without infringing the valid enforceable patents and proprietary rights of third parties. Carisma's ability to stop third parties from making, using, selling, offering to sell or importing its products may depend on the extent to which it has rights under valid and enforceable licenses, patents or trade secrets that cover these activities. With respect to both Carisma's owned and licensed intellectual property, Carisma cannot be sure that patents will be granted with respect to any of its pending patent applications or with respect to any patent applications filed by Carisma in the future, nor can it be sure that any of its existing patents or any patents that may be granted to Carisma in the future will be commercially useful in protecting its commercial products and methods of manufacturing such products, as well as being held valid if challenged.

Carisma currently controls over 15 granted patents and over 43 patent applications pending in several jurisdictions, including the United States, Europe, Australia, Brazil, Canada, China, Israel, Japan, Korea, Mexico, New Zealand, and Singapore. Intellectual property is a critical component of Carisma's business plan for maximizing return on its investments. Carisma is actively developing intellectual property and will continue to maintain and defend United States and international patent rights for its products, technology, and development and improvement of its discovery platforms.

To maintain its competitive position in the market, Carisma has spent considerable effort securing intellectual property rights, including several patent rights related to its proprietary CAR technology and myeloid cell engineering technology.

Exclusively Licensed Intellectual Property - UPenn

Carisma has exclusive rights to three patent families, and non-exclusive rights to related know-how by virtue of a license agreement with the University of Pennsylvania. These patent families are directed to, among other things, methods of efficiently expressing CARs in myeloid cells, including monocytes, macrophages, and dendritic cells and enhancing effector activity, as well as the modified cells and compositions including such modified cells for use in several indications including various oncology targets. The applications will have an expiration date of no earlier than 2036. This licensed patent portfolio includes:

- A patent family that includes nine issued U.S. patents and two pending U.S. patent applications relating to modified macrophages, monocytes and dendric cells comprising CARs. These U.S. patents are expected to expire in 2036, absent any term adjustments or extensions. Corresponding foreign applications have been filed and are pending in Australia (including one issued patent), Brazil (including one issued patent) Canada, China (including one issued patent), Europe, Israel (including one issued patent), India, Japan (including one issued patent), Korea, Mexico (including one issued patent), New Zealand, Russia (including one issued patent), Singapore, Thailand and South Africa.

- A patent family that includes one pending U.S. patent application relating to modified macrophages, monocytes and dendric cells in protein aggregate-associated disorders. Patent applications in this family are expected to expire in 2039, absent any term adjustments or extensions. Corresponding foreign applications have been filed and are pending in Australia, Canada, China, Europe, Israel, Japan, Korea, New Zealand, and Singapore.

- A patent family that includes one pending U.S. patent application relating to activation of antigen presenting cells. Patent applications in this family are expected to expire in 2040, absent any term adjustments or extensions. A corresponding foreign application has been filed in Europe.

Exclusively Licensed Intellectual Property - NYU

Carisma has exclusive rights to one patent family, and non-exclusive rights to related know-how by virtue of a license agreement with New York University, or NYU. The rights granted under the NYU license are to all indications for human use. This licensed patent portfolio includes:

- A patent family that includes one U.S. patent relating to a chimeric HIV-1 vector with an SIV minimal Vpx packaging domain and method of making virions with enhanced infectivity for macrophages and dendric cells. The U.S. patent is expected to expire in 2033, absent any term adjustments or extensions.

Carisma Owned Intellectual Property

Carisma currently owns five U.S. patent families. This owned patent portfolio includes:

- A patent family that includes one issued U.S. patent and two pending U.S. patent applications relating to macrophages, monocytes and dendric cells comprising novel CAR constructs. Patent applications in this family are expected to expire in 2041, absent any term adjustments or extensions.

- A patent family that includes one pending Patent Cooperation Treaty, or PCT, application relating to mRNA transfection of macrophages, monocytes and dendric cells comprising CARs. Patent applications in this family are expected to expire in 2041, absent any term adjustments or extensions.

- A patent family that includes one pending PCT application relating to modified immune cells for fibrosis and inflammation. Patent applications in this family are expected to expire in 2041, absent any term adjustments or extensions.

- A patent family that includes one pending PCT application relating to in vivo delivery of CARs to a patient's own macrophages, monocytes, dendritic cells, or stem cells. Patent applications in this family are expected to expire in 2042, absent any term adjustments or extensions.

- A patent family that includes one pending PCT application relating to self-polarizing immune cells. Patent applications in this family are expected to expire in 2042, absent any term adjustments or extensions.

- Carisma will also seek to generate additional intellectual property that covers enhancements to all aspects of the platform, including novel CARs, combinations, gene editing and manufacturing improvements. Where appropriate, Carisma will also look to in-license relevant technology from third parties.

Patent Term and Patent Term Extensions

The term of individual patents depends upon the legal term for patents in the countries in which they are obtained. In most countries, including the United States, the patent term is 20 years from the earliest filing date of a non-provisional patent application. In the United States, a patent's term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the USPTO in examining and granting a patent or may be shortened if a patent is terminally disclaimed over an earlier filed patent. The term of a patent that covers a drug, biological product or medical device approved pursuant to a pre-market approval may also be eligible for patent term extension, or PTE, when FDA approval is granted, provided statutory and regulatory requirements are met. The length of the PTE is related to the length of time the drug is under regulatory review while the patent is in force. The Drug Price Competition and Patent Term Restoration Act of 1984, or the Hatch-Waxman Act, permits a patent term extension of up to five years beyond the expiration date set for the patent. Patent extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent applicable to each regulatory review period may be granted an extension and only those claims regarding the approved drug are extended. Similar provisions are available in Europe and other foreign jurisdictions to extend the term of a patent that covers an approved drug.

Trademarks

Carisma's trademark portfolio currently includes registered U.S. trademarks for Carisma in the United States, Europe, Great Britain and Japan. In order to supplement the protection of its brand, Carisma also has a registered internet domain name. Going forward, Carisma will consider additional trademarks to enhance its brand and support its products.

Trade Secrets

Carisma relies, in some circumstances, on trade secrets to protect its unpatented technology. However, trade secrets can be difficult to protect in certain circumstances. Carisma seeks to protect its trade secrets and proprietary technology and processes, including through confidentiality agreements with its employees, consultants, scientific advisors and contractors. Carisma also seeks to preserve the integrity and confidentiality of its data and trade secrets by maintaining physical security of its premises and physical and electronic security of its information technology systems. While Carisma has confidence in these individuals, organizations and systems, agreements or security measures may be breached. Carisma may not have adequate remedies for any breach and could lose its trade secrets through such a breach. In addition, Carisma's trade secrets may otherwise become known or be independently discovered by competitors. To the extent that its consultants, contractors or collaborators use intellectual property owned by others in their work for Carisma, disputes may arise as to the rights in related or resulting trade secrets, know-how and inventions.

Moderna Collaboration Agreement

In January 2022, Carisma entered into a Collaboration and License Agreement with Moderna providing for a broad strategic partnership to discover, develop and commercialize *in vivo* engineered CAR-M therapeutics for up to 12 oncology programs. Carisma refers to this agreement as the Moderna Collaboration Agreement.

In collaboration with Moderna, Carisma has established an approach that uses Moderna's LNP/mRNA technology, together with Carisma's CAR-M platform technology, to create novel *in vivo* oncology medications.

Under the Moderna Collaboration Agreement, the parties initiate research programs during a research term, focused on the discovery and research of products directed to biological targets. Either party may nominate a target for inclusion in a research program, subject to certain exclusions. Carisma refers to a target included in a research program pursuant to designated procedures as a research target. Moderna may replace research targets pursuant to designated procedures. The first four research targets have been nominated and all programs are currently in the discovery phase at Carisma. Moderna funds the cost of Carisma's activities in accordance with an agreed research budget.

Moderna has the right to designate up to 12 research targets as development targets during a specified development target nomination period upon payment of a development target designation milestone payment. Moderna can replace development targets with research targets during a specified period of time. If Moderna exercises its right to designate a development target, Moderna will have a worldwide, exclusive license under patents and know-how controlled by Carisma to develop and commercialize products directed to the applicable development target, subject to certain diligence obligations.

Commencing a specified time after the effective date of the Moderna Collaboration Agreement, Moderna will have the right to nominate targets relating to diseases outside the field of oncology for inclusion in research programs in specified circumstances. Such right is subject to the same exclusions as Moderna's right to nominate other targets for inclusion in research programs.

During the term of the Moderna Collaboration Agreement, Carisma and its affiliates are subject to various exclusivity obligations under which Carisma is not permitted to research, develop or commercialize particular products outside of the collaboration, including products for use as *in vivo* therapies in the field of oncology, products directed to any target included in the collaboration, or products containing a polypeptide provided by Carisma to Moderna in connection with a research program that are directed to any development target.

Under the terms of the Moderna Collaboration Agreement, Carisma received a $45.0 million up-front cash payment. Assuming Moderna develops and commercializes 12 products, each directed to a different development target, Carisma is also eligible to receive up to between $247.0 million and $253.0 million per product in development target designation, development, regulatory and commercial milestone payments. In addition, Carisma is eligible to receive mid to high single digit tiered royalties on net sales of any products that are commercialized under the agreement, which may be subject to reductions. Moderna has also agreed to cover the cost of certain milestone payments and royalties Carisma owes to a licensor under one of its intellectual property in-license agreements that Carisma is sublicensing to Moderna under the Moderna Collaboration Agreement, which royalties Moderna may deduct in part from any royalties owed to Carisma.

Unless earlier terminated, the Moderna Collaboration Agreement will expire upon the expiration of all royalty obligations thereunder. The royalty period for each product developed under the Moderna Collaboration Agreement will expire on a country-by-country basis upon the later of (1) the expiration of the last-to-expire valid patent claim of specified patents, (2) the expiration of regulatory-based exclusivity for such product in such country or (3) ten years after the first commercial sale with respect to such product in such country. Moderna has the right to terminate the Moderna Collaboration Agreement for convenience in its entirety or with respect to a specific product or target on ninety days' prior notice. Either Carisma or Moderna may terminate the Moderna Collaboration Agreement in its entirety if the other party is in material breach and such breach is not cured within the specified cure period, except in the case of Moderna's breach of its diligence obligations, termination by Carisma is limited to the applicable target and product. In addition, either Carisma or Moderna may terminate the Moderna Collaboration Agreement in the event of specified insolvency events involving the other party. As an alternative to termination in the event of Carisma's uncured material breach of certain sections of the agreement, Moderna has the option to continue the collaboration under the agreement with reduced payment obligations.

University of Pennsylvania License Agreement

In November 2017, Carisma entered into a license agreement with the Trustees of the University of Pennsylvania, or Penn, which was amended in February 2018, January 2019, March 2020 and June 2021. Carisma refers to this agreement as the Penn License Agreement. Pursuant to the Penn License Agreement, Penn granted Carisma (1) an exclusive, worldwide license, with specified rights to sublicense, under Penn's interest in specified patents related to CAR macrophages, monocytes or dendritic cells, which Carisma refers to collectively as CAR-M, (2) an exclusive, worldwide license, with specified rights to sublicense, under Penn's interest in specified patents related to CAR-M directed to mesothelin, and (3) a nonexclusive, worldwide license under Penn's interest in specified know-how related to CAR-M, with limited rights to sublicense only in combination with specified products or patents. These licensed patents and know-how arose primarily from research conducted by Dr. Saar Gill and Dr. Michael Klichinsky at the University of Pennsylvania, co-founders of Carisma. The foregoing licenses are subject to rights retained by Penn for specified non-commercial uses and rights retained by the United States government. Under the Penn License agreement, Carisma is obligated to use commercially reasonable efforts to pursue development and commercialization of at least one CAR-M product in oncology and non-oncology fields.

Carisma is responsible for paying Penn an annual license maintenance fee in the low tens of thousands of dollars, payable until Carisma's first payment of a royalty. Carisma is required to pay Penn up to $10.9 million per product in development and regulatory milestone payments, up to $30.0 million per product in commercial milestone payments, and up to an additional $1.7 million in development and regulatory milestone payments for the first CAR-M product directed to mesothelin. While the agreement remains in effect, Carisma is required to pay Penn low to mid-single digit percentage tiered royalties on annual net sales of licensed products, which may be subject to reductions. Penn is guaranteed a minimum royalty payment amount in the low hundreds of thousands of dollars for each year after the first commercial sale of a licensed product. Carisma must also pay Penn a percentage in the mid-single digits to low double digits of certain types of income Carisma receives from sublicensees. In addition, Carisma is required to pay Penn an annual alliance management fee in the low tens of thousands of dollars, ending after several years, unless Carisma provides funding to Penn for research and development activities that extend beyond a specified date, in which case Carisma will continue to owe the alliance management fee for each year in which Carisma continues to fund such activities. Carisma also paid Penn an upfront fee in the low hundreds of thousands of dollars for the license to the patents related to the mesothelin binder that is incorporated into the CAR design for Carisma's mesothelin product candidate. Carisma is responsible for a pro rata share of costs relating to the prosecution and maintenance of the licensed patents.

The royalty period for each licensed product will expire on a product-by-product basis upon the later of (1) the expiration of the last-to-expire valid patent claim of the licensed patents covering such product in the country of sale or in the country of manufacture, or (2) the expiration of regulatory-based exclusivity for such product in the country of sale. The license agreement remains in effect until the later of (1) expiration or abandonment of the last licensed patent or (2) loss of regulatory exclusivity. Carisma may terminate the agreement for convenience upon thirty days' prior notice. Penn may terminate the agreement for Carisma's material breach, subject to a specified cure period, except for certain breaches for which Penn may terminate immediately. Penn may also terminate if Carisma becomes the subject of a specified insolvency event.

New York University License Agreement

In July 2020, Carisma entered into a license agreement with NYU. Carisma refers to this agreement as the NYU License Agreement. Pursuant to the NYU License Agreement, NYU granted Carisma (1) an exclusive, worldwide license, with specified rights to sublicense, under NYU's interest in specified patents related to the Vpx-LV and (2) a nonexclusive, worldwide license, with specified rights to sublicense, under NYU's interest in specified know-how related to the Vpx-LV, in each case to develop, manufacture, use and sell products developed using the Vpx-LV, which Carisma refers to as Licensed Products. The foregoing licenses are subject to rights retained by NYU to use, and to permit other non-commercial entities to use, the licensed patents and licensed know-how for educational and research purposes, as well as rights retained by the United States government. Under the NYU License Agreement, Carisma is obligated to use reasonable diligence to carry out a specified development plan and to obtain regulatory approval for Licensed Products in the U.S. and each of the other countries in which Carisma or its sublicensees intend to produce, use, and/or sell Licensed Products, as well as to begin the regular commercial production, use, and sale of the Licensed Products in good faith in accordance with the development plan and to continue diligently thereafter to commercialize the Licensed Products.

Carisma is required to pay NYU an annual license maintenance fee in the mid tens of thousands of dollars; up to $1,685,000 per Licensed Product in development and regulatory milestone payments; and low single digit percentage tiered royalties on annual net sales of Licensed Products on a country-by-country basis until the later of (1) 12 years after first commercial sale of a Licensed Product in such country or (2) expiration of the last to expire licensed patent. Carisma must also pay NYU a percentage in the low single digits to low double digits of certain types of income Carisma receives from sublicensees or assignees of the agreement. Carisma is also responsible for all costs relating to the prosecution, maintenance, and defense of the licensed patents.

The NYU License Agreement remains in effect until the expiration of all royalty terms in all countries. Either party may terminate the NYU License Agreement for the other party's uncured material breach or insolvency or bankruptcy.

Competition

The biopharmaceutical industry, and in particular the cell therapy field, is characterized by intense investment and competition aimed at rapidly advancing new technologies, intense competition, and a strong emphasis on intellectual property and proprietary products. Carisma's platform and therapeutic product candidates are expected to face substantial competition from multiple technologies, marketed products, and numerous other therapies being developed by other biopharmaceutical companies, academic research institutions, governmental agencies, and public and private research institutions. Many of Carisma's potential competitors have substantially greater financial, technical, and other resources, such as larger research and development staff, established manufacturing capabilities and facilities, and experienced marketing organizations with well-established sales forces, and any product candidates that Carisma successfully develops and commercializes will compete with existing therapies and new therapies that may become available in the future. In addition, there is substantial patent infringement litigation in the biopharmaceutical industry, and, in the future, Carisma may bring or defend such litigation against its competitors.

The key competitive factors affecting the success of Carisma's product candidates, if approved, are likely to be their efficacy, safety, convenience and price, the level of competition, and the availability of coverage and adequate reimbursement from third-party payors.

Unlike other cell therapy approaches, Carisma's CAR-M platform is based on engineering macrophages and monocytes with proprietary vectors, constructs, and processes, enabling a differentiated platform from other cell therapy competitors that primarily focus on T or NK cells. While Carisma believes that its scientific expertise, novel technology, and intellectual property position offer competitive advantages, Carisma faces competition from multiple other cell therapy technologies and companies. Other companies developing engineered myeloid cell therapies include, among others, Myeloid Therapeutics, Shoreline Biosciences, Inceptor Bio, Thunder Bio, Resolution Therapeutics, CellOrigin, Sirpant Therapeutics, and others.

Due to the broad promise of cell therapies, and the potential of myeloid cell-based approaches to expand cell therapy efficacy into solid tumors, Carisma expects increasing competition from new and existing companies across several fronts, which include, among others:

- ***Myeloid cell therapies:*** Myeloid Therapeutics, Shoreline Biosciences, Inceptor Bio, Thunder Bio, CellOrigin, Deverra
- ***Autologous T-cell therapies:*** Adaptimmune Therapeutics, Autolus Therapeutics, Bluebird, Bristol Myers Squibb, Kite/Gilead, Novartis, Gracell, TCR2, Poseida, Vor, TMunity, among others
- ***Allogeneic T-cell therapies:*** Allogene, Atara, Century, Cellectis, Celyad, CRISPR, Fate, Gracell, Kite/Gilead, Legend, Poseida, Precision Bio, Sana, Vor, among others
- ***NK and other cell therapies:*** Artiva, Celularity, Century, Editas, Fate, Fortress, ImmunityBio, Nkarta, NKGen, Takeda, Adicet, Gamida Cell, among others
- ***Direct in vivo reprogrammed cell therapies:*** Umoja, Ensoma, Interius, Tidal/Sanofi, BioNTech

In addition to competition from other cell therapy companies, any products that Carisma develops may also face competition from other types of therapies. Other companies developing non-cell therapies, including gene therapies, include Gilead, ALX Oncology, Trillium, Five-Prime, Immune-Onc, Pionyr, Infinity, NextCure, OncoResponse, Curis, Faron, Apexigen, Pfizer, Dren, and multiple biotechnology and pharmaceutical companies developing other directly competitive technologies such as small molecules, immune agonists, antibodies, bi/tri specific antibodies, antibody drug conjugates, and other solid tumor therapeutics.

Carisma also competes with third parties for retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, its programs. Carisma may pursue the in-license or acquisition of rights to complementary technologies and product candidates on an opportunistic basis. The acquisition and licensing of technologies and product candidates is a competitive area, and a number of more established companies also have similar strategies to in-license or acquire technologies and product candidates that Carisma may consider attractive. These established companies may have a competitive advantage over Carisma due to their size, cash resources and greater development and commercialization capabilities. In addition, companies that perceive Carisma to be a competitor may be unwilling to assign or license rights to Carisma. Carisma also may be unable to in-license or acquire the relevant technology or product candidate on terms that would allow it to make an appropriate return on its investment.

Carisma's commercial opportunity could be reduced or eliminated if its competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that it may develop. Carisma's competitors also may obtain FDA or other regulatory approval for their products more rapidly than it may obtain approval for Carisma's, which could result in its competitors establishing a strong market position before it is able to enter the market. In addition, Carisma's ability to compete may be affected in many cases by insurers or other third-party payors seeking to encourage the use of generic products.

Government Regulation

Government authorities in the United States, at the federal, state and local level, and in other countries and jurisdictions, including the European Union, extensively regulate, among other things, the research, development, testing, manufacture, pricing, reimbursement, sales, quality control, approval, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, post-approval monitoring and reporting, and import and export of pharmaceutical products, including biological products. The processes for obtaining marketing approvals in the United States and in foreign countries and jurisdictions, along with subsequent compliance with applicable statutes and regulations and other regulatory authorities, require the expenditure of substantial time and financial resources.

Licensure and Regulation of Biologics in the United States

In the United States, Carisma's product candidates are regulated as biological products, or biologics, under the Public Health Service Act, or PHSA, and the Federal Food, Drug, and Cosmetic Act, or FDCA, and its implementing regulations and guidance. A company, institution, or organization which takes responsibility for the initiation and management of a clinical development program for such products, and for their regulatory approval, is typically referred to as a sponsor. The failure of a sponsor to comply with the applicable U.S. requirements at any time during the product development process, including pre-clinical testing, clinical testing, the approval process, or post-approval process, may subject a sponsor to delays in the conduct of the study, regulatory review, and approval, and/or administrative or judicial sanctions.

A sponsor seeking approval to market and distribute a new biologic in the United States generally must satisfactorily complete each of the following steps:

- pre-clinical laboratory tests, animal studies, and formulation studies all performed in accordance with the FDA's Good Laboratory Practices, or GLP, regulations and standards and other applicable regulations;
- completion of the manufacture, under cGMP conditions, of the drug substance and drug product that the sponsor intends to use in human clinical trials along with required analytical and stability testing;
- design of a clinical protocol and submission to the FDA of an Investigational New Drug application, or IND, for human clinical testing, which must become effective before human clinical trials may begin;
- approval by an independent institutional review board, or IRB, representing each clinical site before each clinical trial may be initiated;

- performance of adequate and well-controlled human clinical trials to establish the safety, potency, and purity of the product candidate for each proposed indication, in accordance with current good clinical practices, or GCP;

- preparation and submission to the FDA of a biologics license application, or BLA, for a biologic product requesting marketing for one or more proposed indications, including submission of detailed information on the manufacture and composition of the product in clinical development and proposed labelling;

- review of the product by an FDA advisory committee, where appropriate or if applicable;

- satisfactory completion of one or more FDA inspections of the manufacturing facility or facilities, including those of third parties, at which the product, or components thereof, are produced to assess compliance with cGMP requirements and to assure that the facilities, methods, and controls are adequate to preserve the product's identity, strength, quality, and purity;

- satisfactory completion of any FDA audits of the pre-clinical studies and clinical trial sites to assure compliance with GLP, as applicable, and GCP, and the integrity of clinical data in support of the BLA;

- payment of user Prescription Drug User Fee Act, or PDUFA, securing FDA approval of the BLA and licensure of the new biologic product; and

- compliance with any post-approval requirements, including the potential requirement to implement a risk evaluation and mitigation strategy, or REMS, and any post-approval studies or other post-marketing commitments required by the FDA.

Pre-clinical Studies

Before testing any biologic product candidate in humans, the product candidate must undergo pre-clinical testing. Pre-clinical tests include laboratory evaluations of product chemistry, formulation and stability, as well as studies to evaluate the potential for efficacy and toxicity in animal studies. These studies are generally referred to as IND-enabling studies. The conduct of the pre-clinical tests and formulation of the compounds for testing must comply with federal regulations and requirements, including GLP regulations and standards and the United States Department of Agriculture's Animal Welfare Act, if applicable. The results of the pre-clinical tests, together with manufacturing information and analytical data, are submitted to the FDA as part of an IND application.

Investigational New Drug Application

An IND is an exemption from the FDCA that allows an unapproved product candidate to be shipped in interstate commerce for use in an investigational clinical trial and a request for FDA authorization to administer such investigational product to humans. The IND automatically becomes effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions about the product or conduct of the proposed clinical trial, including concerns that human research subjects will be exposed to unreasonable health risks. In that case, the IND sponsor and the FDA must resolve any outstanding FDA concerns before the clinical trials can begin or recommence. As a result, submission of the IND may result in the FDA not allowing the trials to commence or allowing the trial to commence on the terms originally specified by the sponsor in the IND.

If the FDA raises concerns or questions either during this initial 30-day period, or at any time during the IND process, it may choose to impose a partial or complete clinical hold. Clinical holds are imposed by the FDA whenever there is concern for patient safety and may be a result of new data, findings, or developments in clinical, pre-clinical, and/or chemistry, manufacturing, and controls. This order issued by the FDA would delay either a proposed clinical trial or cause suspension of an ongoing trial, until all outstanding concerns have been adequately addressed and the FDA has notified the company that investigations may proceed. This could cause significant delays or difficulties in completing Carisma's planned clinical trial or future clinical trials in a timely manner.

Following the issuance of a clinical hold or partial clinical hold, a clinical investigation may only resume once the FDA has notified the sponsor that the investigation may proceed. The FDA will base that determination on information provided by the sponsor correcting the deficiencies previously cited or otherwise satisfying the FDA that the investigation can proceed or recommence. Occasionally, clinical holds are imposed due to manufacturing issues that may present safety issues for the clinical study subjects.

Expanded Access to an Investigational Drug for Treatment Use

Expanded access, sometimes called "compassionate use," is the use of investigational products outside of clinical trials to treat patients with serious or immediately life-threatening diseases or conditions when there are no comparable or satisfactory alternative treatment options. The rules and regulations related to expanded access are intended to improve access to investigational products for patients who may benefit from investigational therapies. FDA regulations allow access to investigational products under an IND by the company or the treating physician for treatment purposes on a case-by-case basis for: individual patients (single-patient IND applications for treatment in emergency settings and non-emergency settings); intermediate-size patient populations; and larger populations for use of the investigational product under a treatment protocol or treatment IND application.

When considering an IND application for expanded access to an investigational product with the purpose of treating a patient or a group of patients, the sponsor and treating physicians or investigators will determine suitability when all of the following criteria apply: patient(s) have a serious or immediately life-threatening disease or condition, and there is no comparable or satisfactory alternative therapy to diagnose, monitor, or treat the disease or condition; the potential patient benefit justifies the potential risks of the treatment and the potential risks are not unreasonable in the context or condition to be treated; and the expanded use of the investigational drug for the requested treatment will not interfere initiation, conduct, or completion of clinical investigations that could support marketing approval of the product or otherwise compromise the potential development of the product.

There is no obligation for a sponsor to make its drug products available for expanded access; however, as required by the 21st Century Cures Act, or Cures Act, passed in 2016, if a sponsor has a policy regarding how it evaluates and responds to expanded access requests, sponsors are required to make such policies publicly available upon the earlier of initiation of a Phase 2 or Phase 3 clinical trial, or 15 days after the investigational drug or biologic receives designation as a breakthrough therapy, fast track product, or regenerative medicine advanced therapy.

In addition to and separate from expanded access, on May 30, 2018, the Right to Try Act was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational products that have completed a Phase 1 clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a manufacturer to make its investigational products available to eligible patients as a result of the Right to Try Act.

Human Clinical Trials in Support of a BLA

Clinical trials involve the administration of the investigational product candidate to healthy volunteers or patients with the disease or condition to be treated under the supervision of a qualified principal investigator in accordance with GCP requirements. Clinical trials are conducted under protocols detailing, among other things, the objectives of the trial, inclusion and exclusion criteria, the parameters to be used in monitoring safety, and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND.

A sponsor who wishes to conduct a clinical trial outside the United States may, but need not, obtain FDA authorization to conduct the clinical trial under an IND. When a foreign clinical trial is conducted under an IND, all FDA IND requirements must be met unless waived. When a foreign clinical trial is not conducted under an IND, the sponsor must ensure that the trial complies with certain regulatory requirements, including GCP requirements, of the FDA in order to use the trial as support for an IND or application for marketing approval. The GCP requirements encompass both ethical and data integrity standards for clinical trials. The FDA's regulations are intended to help ensure the protection of human subjects enrolled in non-IND foreign clinical trials, as well as the quality and integrity of the resulting data. They further help ensure that non-IND foreign trials are conducted in a manner comparable to that required for clinical trials in the United States.

Further, each clinical trial must be reviewed and approved by an IRB either centrally or individually at each institution at which the clinical trial will be conducted. The IRB will consider, among other things, clinical trial design, patient informed consent, ethical factors, the safety of human subjects, and the possible liability of the institution. An IRB must operate in compliance with FDA regulations. The FDA, IRB, or the clinical trial sponsor may suspend or discontinue a clinical trial at any time for various reasons, including a finding that the clinical trial is not being conducted in accordance with FDA requirements or that the participants are being exposed to an unacceptable health risk. Clinical testing also must satisfy extensive GCP rules and the requirements for informed consent.

Additionally, some clinical trials are overseen by an independent group of qualified experts organized by the clinical trial sponsor, known as a data safety monitoring board, or DSMB. This group may recommend continuation of the trial as planned, changes in trial conduct, or cessation of the trial at designated check points based on certain available data from the trial to which only the DSMB has access.

Clinical trials typically are conducted in three sequential phases, but the phases may overlap or be combined. Additional studies may be required after approval.

- *Phase 1* clinical trials are initially conducted in a limited population to test the product candidate for safety, including adverse effects, dose tolerance, absorption, metabolism, distribution, excretion, and pharmacodynamics in healthy humans or, on occasion, in patients, such as cancer patients.

- *Phase 2* clinical trials are generally conducted in a limited patient population to identify possible adverse effects and safety risks, evaluate the efficacy of the product candidate for specific targeted indications and determine dose tolerance and optimal dosage. Multiple Phase 2 clinical trials may be conducted by the sponsor to obtain information prior to beginning larger and more costly Phase 3 clinical trials.

- *Phase 3* clinical trials proceed if the Phase 2 clinical trials demonstrate that a dose range of the product candidate is potentially effective and has an acceptable safety profile. Phase 3 clinical trials are undertaken within an expanded patient population to further evaluate dosage, provide substantial evidence of clinical efficacy, and further test for safety in an expanded and diverse patient population at multiple, geographically dispersed clinical trial sites. A well-controlled, statistically robust Phase 3 trial may be designed to deliver the data that regulatory authorities will use to decide whether or not to approve, and, if approved, how to appropriately label a biologic; such Phase 3 studies are referred to as “pivotal.”

In some cases, the FDA may approve a BLA for a product but require the sponsor to conduct additional clinical trials to further assess the product’s safety and effectiveness after approval. Such post-approval trials are typically referred to as Phase 4 clinical trials. These studies are used to gain additional experience from the treatment of patients in the intended therapeutic indication and to document a clinical benefit in the case of biologics approved under accelerated approval regulations. If the FDA approves a product while a company has ongoing clinical trials that were not necessary for approval, a company may be able to use the data from these clinical trials to meet all or part of any Phase 4 clinical trial requirement or to request a change in the product labeling. The failure to exercise due diligence with regard to conducting Phase 4 clinical trials could result in withdrawal of approval for products.

A clinical trial may combine the elements of more than one phase and the FDA often requires more than one Phase 3 trial to support marketing approval of a product candidate. A company’s designation of a clinical trial as being of a particular phase is not necessarily indicative that the study will be sufficient to satisfy the FDA requirements of that phase because this determination cannot be made until the protocol and data have been submitted to and reviewed by the FDA. Generally, pivotal trials are Phase 3 trials, but they may be Phase 2 trials if the design provides a well-controlled and reliable assessment of clinical benefit, particularly in an area of unmet medical need.

In December 2022, with the passage of Food and Drug Omnibus Reform Act, or FDORA, Congress required sponsors to develop and submit a diversity action plan for each Phase 3 clinical trial or any other “pivotal study” of a new drug or biological product. These plans are meant to encourage the enrollment of more diverse patient populations in late-stage clinical trials of FDA-regulated products. Specifically, actions plans must include the sponsor's goals for enrollment, the underlying rationale for those goals, and an explanation of how the sponsor intends to meet them. In addition to these requirements, the legislation directs the FDA to issue new guidance on diversity action plans.

Finally, sponsors of clinical trials are required to register and disclose certain clinical trial information on a public registry (clinicaltrials.gov) maintained by the U.S. National Institutes of Health, or NIH. In particular, information related to the product, patient population, phase of investigation, study sites and investigators and other aspects of the clinical trial is made public as part of the registration of the clinical trial. The failure to submit clinical trial information to clinicaltrials.gov, as required, is a prohibited act under the FDCA with violations subject to potential civil monetary penalties of up to $10,000 for each day the violation continues. Although the FDA has historically not enforced these reporting requirements due to the Department of Health and Human Services', or HHS, long delay in issuing final implementing regulations, those regulations have now been issued and the FDA has issued several Notices of Noncompliance to manufacturers since April 2021.

Special Regulations and Guidance Governing Gene Therapy Products

The FDA has defined a gene therapy product as one that mediates its effects by transcription and/or translation of transferred genetic material and/or by integrating into the host genome and which is administered as nucleic acids, viruses, or genetically engineered microorganisms. The products may be used to modify cells *in vivo* or transferred to cells *ex vivo* prior to administration to the recipient. Within the FDA, the Center for Biologics Evaluation and Research, or CBER, regulates gene therapy products. Within CBER, the review of gene therapy and related products is consolidated in the Office of Tissues and Advance Therapies, or OTAT, and the FDA has established the Cellular, Tissue and Gene Therapies Advisory Committee to advise CBER on its reviews. In September 2022, the FDA announced retitling of OTAT to the Office of Therapeutic Products, or OTP, and elevation of OTP to a "Super Office" to meet its growing cell and gene therapy workload and new commitments under the Prescription Drug User Fee Act agreement for fiscal years 2023-2027. CBER works closely with the Local Biosafety Board, a federal advisory committee, in reviewing proposed and ongoing gene therapy protocols and engaging in a public discussion of scientific, safety, ethical, and societal issues related to those protocols. The NIH and the Recombinant DNA Advisory Committee, or RAC, a federal advisory committee, also advise the FDA on gene therapy issues and other issues related to emerging technologies. The FDA and the NIH have published guidance documents with respect to the development and submission of gene therapy protocols.

The FDA has issued various guidance documents regarding gene therapies, including final guidance documents released in January 2020 relating to chemistry, manufacturing and controls information for gene therapy INDs, gene therapies for rare diseases and gene therapies for retinal disorders, as well as draft guidance in January 2021 for Human Gene Therapy for Neurodegenerative Diseases. Although the FDA has indicated that these and other guidance documents it previously issued are not legally binding, Carisma believes that its compliance with them is likely necessary to gain approval for any gene therapy product candidate Carisma may develop. The guidance documents provide additional factors that the FDA will consider at each of the above stages of development and relate to, among other things, the proper pre-clinical assessment of gene therapies; the chemistry, manufacturing, and control information that should be included in an IND application; the proper design of tests to measure product potency in support of an IND or BLA application; and measures to observe delayed adverse effects in subjects who have been exposed to investigational gene therapies when the risk of such effects is high. Further, the FDA usually recommends that sponsors observe subjects for potential gene therapy-related delayed adverse events for a 15-year period, including a minimum of five years of annual examinations followed by 10 years of annual queries, either in person or by questionnaire.

Further, to facilitate adverse event reporting and dissemination of additional information about gene therapy trials, the FDA and the NIH established the Genetic Modification Clinical Research Information System, or GeMCRIS. Investigators and sponsors of human gene transfer trials can utilize this web-based system to report serious adverse events and to provide annual reports.

Finally, for a gene therapy product, the FDA also will not approve the product if the manufacturer is not in compliance with good tissue practices, or GTP. These standards are found in FDA regulations and guidance that govern the methods used in, and the facilities and controls used for, the manufacture of human cells, tissues, and cellular and tissue-based products, or HCT/Ps, which are human cells or tissue intended for implantation, transplant, infusion, or transfer into a human recipient. The primary intent of the GTP requirements is to ensure thatT-cell and tissue-based products are manufactured in a manner designed to prevent the introduction, transmission, and spread of communicable disease. FDA regulations also require tissue establishments to register and list their HCT/Ps with the FDA and, when applicable, to evaluate donors through screening and testing.

Pediatric Studies

Under the Pediatric Research Equity Act of 2003, or PREA, a BLA or supplement thereto must contain data that are adequate to assess the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. Sponsors must also submit pediatric study plans prior to the assessment data. Those plans must contain an outline of the proposed pediatric study or studies the sponsor plans to conduct, including study objectives and design, any deferral or waiver requests, and other information required by regulation. The sponsor, the FDA, and the FDA's internal review committee must then review the information submitted, consult with each other, and agree upon a final plan. The FDA or the sponsor may request an amendment to the plan at any time.

The FDA may, on its own initiative or at the request of the sponsor, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements. A deferral may be granted for several reasons, including a finding that the product or therapeutic candidate is ready for approval for use in adults before pediatric trials are completed. The FDA is required to send a PREA Non-Compliance letter to sponsors who have failed to submit their pediatric assessments under PREA, have failed to seek or obtain a deferral or deferral extension or have failed to request approval for a required pediatric formulation. Unless otherwise required by regulation, the pediatric data requirements do not apply to products with orphan designation, although FDA has recently taken steps to limit what it considers abuse of this statutory exemption in PREA. The FDA also maintains a list of diseases that are exempt from PREA requirements due to low prevalence of disease in the pediatric population.

Compliance with cGMP Requirements

In connection with its review of a BLA, the FDA typically will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in full compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. The PHSA emphasizes the importance of manufacturing control for products like biologics whose attributes cannot be precisely defined.

Manufacturers and others involved in the manufacture and distribution of products must also register their establishments with the FDA and certain state agencies. Both domestic and foreign manufacturing establishments must register and provide additional information to the FDA upon their initial participation in the manufacturing process. Any product manufactured by or imported from a facility that has not registered, whether foreign or domestic, is deemed misbranded under the FDCA. The PREVENT Pandemics Act, which was enacted in December 2022, clarifies that foreign drug manufacturing establishments are subject to registration and listing requirements even if a drug or biologic undergoes further manufacture, preparation, propagation, compounding, or processing at a separate establishment outside of the United States prior to being imported or offered for import into the United States.

Establishments may be subject to periodic unannounced inspections by government authorities to ensure compliance with cGMPs and other laws. Inspections must follow a "risk-based schedule" that may result in certain establishments being inspected more frequently. Manufacturers may also have to provide, on request, electronic or physical records regarding their establishments. Delaying, denying, limiting, or refusing inspection by the FDA may lead to a product being deemed to be adulterated. Changes to the manufacturing process, specifications or container closure system for an approved product are strictly regulated and often require prior FDA approval before being implemented. The FDA's regulations also require, among other things, the investigation and correction of any deviations from cGMP and the imposition of reporting and documentation requirements upon the sponsor and any third-party manufacturers involved in producing the approved product.

Submission and Filing of a BLA

The results of product candidate development, pre-clinical testing, and clinical trials, including negative or ambiguous results as well as positive findings, are submitted to the FDA as part of a BLA requesting license to market the product. The BLA must contain extensive manufacturing information and detailed information on the composition of the product and proposed labeling as well as payment of a user fee. Under federal law, the submission of most BLAs is subject to an application user fee, which for federal fiscal year 2023 is $3,242,026 for an application requiring clinical data. The sponsor of a licensed BLA is also subject to an annual program fee, which for federal fiscal year 2023 is $393,933. Certain exceptions and waivers are available for some of these fees, such as an exception from the application fee for products with orphan designation and a waiver for certain small businesses.

Following submission of a BLA, the FDA has 60 days to conduct a preliminary review of the application and it must inform the sponsor within that period of time whether the BLA is sufficiently complete to permit substantive review. In the event that FDA determines that an application does not satisfy this standard, it will issue a Refuse to File, or RTF, determination to the sponsor. The FDA may request additional information and studies, and the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing.

Once the submission has been accepted for filing, the FDA begins an in-depth review of the application. Under the goals and policies agreed to by the FDA under the PDUFA, the FDA has ten months in which to complete its initial review of a standard application and respond to the sponsor, and six months for a priority review of the application. The FDA does not always meet its PDUFA goal dates for standard and priority BLAs. The review process may often be significantly extended by FDA requests for additional information or clarification. The review process and the PDUFA goal date may be extended by three months if the FDA requests or if the sponsor otherwise provides additional information or clarification regarding information already provided in the submission within the last three months before the PDUFA goal date.

The FDA also may inspect the sponsor and one or more clinical trial sites to assure compliance with IND and GCP requirements and the integrity of the clinical data submitted to the FDA. With passage of FDORA, Congress clarified the FDA's authority to conduct inspections by expressly permitting inspection of facilities involved in the preparation, conduct, or analysis of clinical and non-clinical studies submitted to FDA as well as other persons holding study records or involved in the study process. To ensure cGMP and GCP compliance by its employees and third-party contractors, a sponsor may incur significant expenditure of time, money and effort in the areas of training, record keeping, production and quality control.

The FDA may also refer the application to an advisory committee for review, evaluation, and recommendation as to whether the application should be approved. In particular, the FDA may refer applications for novel biologic products or biologic products that present difficult questions of safety or efficacy to an advisory committee. Typically, an advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates, and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

The FDA's Decision on a BLA

Under the PHSA, the FDA may approve a BLA if it determines that the product is safe, pure, and potent, and the facility where the product will be manufactured meets standards designed to ensure that it continues to be safe, pure, and potent. Specifically, the FDA must determine that the expected benefits of the proposed product outweigh its potential risks to patients. This "benefit-risk" assessment is informed by the extensive body of evidence about the proposed product in the BLA. On the basis of the FDA's evaluation of the application and accompanying information, including the results of the inspection of the manufacturing facilities and any FDA audits of pre-clinical and clinical trial sites to assure compliance with GCPs, the FDA may issue a complete response letter, or CRL, or an approval letter.

If the application is not approved, the FDA will issue a CRL, which will contain the conditions that must be met in order to secure final approval of the application and will outline recommended actions the sponsor might take to obtain approval of the application. Sponsors that receive a CRL may submit to the FDA information that represents a complete response to the issues identified by the FDA, withdraw the application or request a hearing. The FDA will not approve an application until issues identified in the CRL have been addressed. If a CRL is issued, the sponsor will have one year to respond to the deficiencies identified by the FDA, at which time the FDA can deem the application withdrawn or, in its discretion, grant the sponsor an additional six-month extension to respond. For those seeking to challenge the FDA's CRL decision, the FDA has indicated that sponsors may request a formal hearing on the CRL or they may file a request for reconsideration or a request for a formal dispute resolution.

An approval letter, on the other hand, authorizes commercial marketing of the product with specific prescribing information for specific indications. The FDA may limit the approved indication(s) for use of the product. It may also require that contraindications, warnings, or precautions be included in the product labeling. In addition, the FDA may call for post-approval studies, including Phase 4 clinical trials, to further assess the product's efficacy and/or safety after approval. The agency may also require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution restrictions or other risk management mechanisms, including REMS, to help ensure that the benefits of the product outweigh the potential risks. REMS can include medication guides, communication plans for healthcare professionals, and elements to assure safe use, or ETASU. ETASU can include, but are not limited to, special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring, and the use of patent registries. The FDA may prevent or limit further marketing of a product based on the results of post-market studies or surveillance programs. After approval, many types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Expedited Review Programs

The FDA is authorized to expedite the review of applications in several ways. None of these expedited programs changes the standards for approval but each may help expedite the development or approval process governing product candidates.

- Fast Track designation. The sponsor of a product candidate may request the FDA to designate the product for a specific indication as a Fast Track product concurrent with or after the filing of the IND. Candidate products are eligible for Fast Track designation if *they* are intended to treat a serious or life-threatening condition and demonstrate the potential to address unmet medical needs for the condition. Fast Track designation applies to the combination of the product candidate and the specific indication for which it is being studied. In addition to other benefits, such as the ability to have greater interactions with the FDA, the FDA may initiate review of sections of a Fast Track application before the application is complete, a process known as rolling review.

- Breakthrough therapy designation. To qualify for the breakthrough therapy program, product candidates must be intended to treat a serious or life-threatening disease or condition and preliminary clinical evidence must indicate that such product candidates may demonstrate substantial improvement on one or more clinically significant endpoints over existing therapies. The FDA will seek to ensure the sponsor of a breakthrough therapy product candidate receives intensive guidance on an efficient drug development program, intensive involvement of senior managers and experienced staff on a proactive, collaborative and cross-disciplinary review and rolling review.

- Priority review. A product candidate is eligible for priority review if it treats a serious condition and, if approved, it would be a significant improvement in the safety or effectiveness of the treatment, diagnosis or prevention compared to marketed products. FDA aims to complete its review of priority review applications within six months as opposed to 10 months for standard review.

- Accelerated approval. Drug or biologic products studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may receive accelerated approval. Accelerated approval means that a product candidate may be approved on the basis of adequate and well controlled clinical trials establishing that the product candidate has an effect on a surrogate endpoint that is reasonably likely to predict a clinical benefit, or on the basis of an effect on a clinical endpoint other than survival or irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity and prevalence of the condition and the availability or lack of alternative treatments. As a condition of approval, the FDA may require that a sponsor of a drug or biologic product candidate receiving accelerated approval perform adequate and well controlled post-marketing clinical trials. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials. With passage of the FDORA in December 2022, Congress modified certain provisions governing accelerated approval of drug and biologic products. Specifically, the new legislation authorized the FDA to: require a sponsor to have its confirmatory clinical trial underway before accelerated approval is awarded, require a sponsor of a product granted accelerated approval to submit progress reports on its post-approval studies to the FDA every six months (until the study is completed); and use expedited procedures to withdraw accelerated approval of an NDA or BLA after the confirmatory trial fails to verify the product's clinical benefit. Further, the FDORA requires the FDA to publish on its website “the rationale for why a post-approval study is not appropriate or necessary” whenever it decides not to require such a study upon granting accelerated approval.

- Regenerative advanced therapy. With passage of the Cures Act, Congress authorized the FDA to accelerate review and approval of products designated as regenerative advanced therapies. A product is eligible for this designation if it is a regenerative medicine therapy that is intended to treat, modify, reverse or cure a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the product candidate has the potential to address unmet medical needs for such disease or condition. The benefits of a regenerative advanced therapy designation include early interactions with the FDA to expedite development and review, benefits available to breakthrough therapies, potential eligibility for priority review and accelerated approval based on surrogate or intermediate endpoints.

Post-Approval Regulation

If regulatory approval for marketing of a product or new indication for an existing product is obtained, the sponsor will be required to comply with all regular post-approval regulatory requirements as well as any post-approval requirements that the FDA have imposed as part of the approval process. The sponsor will be required to report certain adverse reactions and production problems to the FDA, provide updated safety and efficacy information and comply with requirements concerning advertising and promotional labeling requirements. Manufacturers and certain of their subcontractors are required to register their establishments with the FDA and certain state agencies and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with ongoing regulatory requirements, including current good manufacturing process, or cGMP, regulations, which impose certain procedural and documentation requirements upon manufacturers. Accordingly, the sponsor and its third-party manufacturers must continue to expend time, money, and effort in the areas of production and quality control to maintain compliance with cGMP regulations and other regulatory requirements.

A product may also be subject to official lot release, meaning that the manufacturer is required to perform certain tests on each lot of the product before it is released for distribution. If the product is subject to official lot release, the manufacturer must submit samples of each lot, together with a release protocol showing a summary of the history of manufacture of the lot and the results of all of the manufacturer's tests performed on the lot, to the FDA. The FDA may in addition perform certain confirmatory tests on lots of some products before releasing the lots for distribution. Finally, the FDA will conduct laboratory research related to the safety, purity, potency, and effectiveness of pharmaceutical products.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending applications or supplements to approved applications, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Products may be promoted only for the approved indications and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability. In September 2021, the FDA published final regulations which describe the types of evidence that the FDA will consider in determining the intended use of a biologic product.

It may be permissible, under very specific, narrow conditions, for a manufacturer to engage in nonpromotional, non-misleading communication regarding off-label information, such as distributing scientific or medical journal information. Moreover, with passage of the Pre-Approval Information Exchange Act in December 2022, sponsors of products that have not been approved may proactively communicate to payors certain information about products in development to help expedite patient access upon product approval. Previously, such communications were permitted under FDA guidance but the new legislation explicitly provides protection to sponsors who convey certain information about products in development to payors, including unapproved uses of approved products.

If a company is found to have promoted off-label uses, it may become subject to adverse public relations and administrative and judicial enforcement by the FDA, the Department of Justice, or the Office of the Inspector General of the Department of Health and Human Services, as well as state authorities. This could subject a company to a range of penalties that could have a significant commercial impact, including civil and criminal fines and agreements that materially restrict the manner in which a company promotes or distributes drug products.

Orphan Drug Designation and Exclusivity

Orphan drug designation in the United States is designed to encourage sponsors to develop products intended for rare diseases or conditions. In the United States, a rare disease or condition is statutorily defined as a condition that affects fewer than 200,000 individuals in the United States or that affects more than 200,000 individuals in the United States and for which there is no reasonable expectation that the cost of developing and making available the biologic for the disease or condition will be recovered from sales of the product in the United States.

Orphan drug designation qualifies a company for tax credits and market exclusivity for seven years following the date of the product's marketing approval if granted by the FDA. An application for designation as an orphan product can be made any time prior to the filing of an application for approval to market the product. A product becomes an orphan when it receives orphan drug designation from the Office of Orphan Products Development at the FDA based on acceptable confidential requests made under the regulatory provisions. The product must then go through the review and approval process like any other product.

A sponsor may request orphan drug designation of a previously unapproved product or new orphan indication for an already marketed product. In addition, a sponsor of a product that is otherwise the same product as an already approved orphan drug may seek and obtain orphan drug designation for the subsequent product for the same rare disease or condition if it can present a plausible hypothesis that its product may be clinically superior to the first drug. More than one sponsor may receive orphan drug designation for the same product for the same rare disease or condition, but each sponsor seeking orphan drug designation must file a complete request for designation.

If a product with orphan designation receives the first FDA approval for the disease or condition for which it has such designation or for a select indication or use within the rare disease or condition for which it was designated, the product generally will receive orphan drug exclusivity. Orphan drug exclusivity means that the FDA may not approve another sponsor's marketing application for the same product for the same indication for seven years, except in certain limited circumstances. If a product designated as an orphan drug ultimately receives marketing approval for an indication broader than what was designated in its orphan drug application, it may not be entitled to exclusivity.

The period of exclusivity begins on the date that the marketing application is approved by the FDA. Orphan drug exclusivity will not bar approval of another product under certain circumstances, including if a subsequent product with the same drug for the same condition is shown to be clinically superior to the approved product on the basis of greater efficacy or safety, or providing a major contribution to patient care, or if the company with orphan drug exclusivity is not able to meet market demand. Under Omnibus legislation enacted in December 2020, the requirement for a product to show clinical superiority applies to drugs and biologics that received orphan drug designation before enactment of the FDA Reauthorization Act of 2017, but have not yet been approved or licensed by FDA. In addition, the FDA may approve a second application for the same product for a different use or a second application for a clinically superior version of the product for the same use.

The FDA and Congress may further reevaluate the Orphan Drug Act and its regulations and policies. This may be particularly true in light of a decision from the Court of Appeals for the 11th Circuit in September 2021 finding that, for the purpose of determining the scope of exclusivity, the term "same disease or condition" means the designated "rare disease or condition" and could not be interpreted by the FDA to mean the "indication or use." Although there have been legislative proposals to overrule this decision, they have not been enacted into law. On January 23, 2023, the FDA announced that, in matters beyond the scope of that court order, the FDA will continue to apply its existing regulations tying orphan-drug exclusivity to the uses or indications for which the orphan drug was approved.

Pediatric Exclusivity

Pediatric exclusivity is another type of non-patent exclusivity in the United States and for biologics, if granted, provides for the attachment of an additional six months of regulatory exclusivity to the term of any existing regulatory exclusivity, including orphan exclusivity. This six-month exclusivity may be granted if a BLA sponsor submits pediatric data that fairly respond to a written request from the FDA for such data. The data do not need to show the product to be effective in the pediatric population studied; rather, if the clinical trial is deemed to fairly respond to the FDA's request, the additional protection is granted. If reports of requested pediatric studies are submitted to and accepted by the FDA within the statutory time limits, whatever statutory or regulatory periods of exclusivity that cover the product are extended by six months.

Biosimilars and Exclusivity

The 2010 Patient Protection and Affordable Care Act, which was signed into law in March 2010, included a subtitle called the BPCIA. The BPCIA established a regulatory scheme authorizing the FDA to approve biosimilars and interchangeable biosimilars. A biosimilar is a biological product that is highly similar to an existing FDA-licensed "reference product." As of January 1, 2021, the FDA has approved 29 biosimilar products for use in the United States. To date, the FDA has approved a number of biosimilars, and the first interchangeable biosimilar product was approved on July 30, 2021, and a second product previously approved as a biosimilar was designated as interchangeable in October 2021. The FDA has also issued numerous guidance documents outlining its approach to reviewing and licensing biosimilars and interchangeable biosimilars under the PHSA, including a draft guidance issued in November 2020 that seeks to provide additional clarity to manufacturers of interchangeable biosimilars.

Under the BPCIA, a manufacturer may submit an application for licensure of a biologic product that is "biosimilar to" or "interchangeable with" a previously approved biological product or "reference product." In order for the FDA to approve a biosimilar product, it must find that there are no clinically meaningful differences between the reference product and proposed biosimilar product in terms of safety, purity, and potency. For the FDA to approve a biosimilar product as interchangeable with a reference product, the agency must find that the biosimilar product can be expected to produce the same clinical results as the reference product, and (for products administered multiple times) that the biologic and the reference biologic may be switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic. In December 2022, Congress clarified through the FDORA that the FDA may approve multiple first interchangeable biosimilar biological products so long as the products are all approved on the first day on which such a product is approved as interchangeable with the reference product.

Under the BPCIA, an application for a biosimilar product may not be submitted to the FDA until four years following the date of approval of the reference product. The FDA may not approve a biosimilar product until 12 years from the date on which the reference product was approved. Even if a product is considered to be a reference product eligible for exclusivity, another company could market a competing version of that product if the FDA approves a full BLA for such product containing the sponsor's own pre-clinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity, and potency of their product. The BPCIA also created certain exclusivity periods for biosimilars approved as interchangeable products. There have been recent government proposals to reduce the 12-year reference product exclusivity period, but none has been enacted to date. At the same time, since passage of the BPCIA, many states have passed laws or amendments to laws, which address pharmacy practices involving biosimilar products.

Federal and State Data Privacy and Security Laws

Under HIPAA, the U.S. Department of Health and Human Services has issued regulations to protect the privacy and security of protected health information used or disclosed by covered entities including certain healthcare providers, health plans, and healthcare clearinghouses. HIPAA also regulates standardization of data content, codes, and formats used in healthcare transactions and standardization of identifiers for health plans and providers. HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their regulations, including the omnibus final rule published on January 25, 2013, also imposes certain obligations on the business associates of covered entities that obtain protected health information in providing services to or on behalf of covered entities. In addition to federal privacy regulations, there are a number of state laws governing confidentiality and security of health information that are applicable to Carisma's business. In addition to possible federal civil and criminal penalties for HIPAA violations, state attorneys general are authorized to file civil actions for damages or injunctions in federal courts to enforce HIPAA and seek attorney's fees and costs associated with pursuing federal civil actions. Accordingly, state attorneys general (along with private plaintiffs) have brought civil actions seeking injunctions and damages resulting from alleged violations of HIPAA's privacy and security rules. New laws and regulations governing privacy and security may be adopted in the future as well.

Additionally, California recently enacted legislation that has been dubbed the first "GDPR-like" law in the United States, the California Consumer Privacy Act, or CCPA. The CCPA creates new individual privacy rights for consumers (as that word is broadly defined in the law) and places increased privacy and security obligations on entities handling personal data of consumers or households. The CCPA went into effect on January 1, 2020 and requires covered companies to provide new disclosures to California consumers, provide such consumers new ways to opt-out of certain sales of personal information, and allow for a new cause of action for data breaches. The CCPA could impact Carisma's business activities depending on how it is interpreted and exemplifies the vulnerability of Carisma's business to not only cyber threats but also the evolving regulatory environment related to personal data and protected health information.

In November 2020, California voters passed a ballot initiative for the California Privacy Rights Act, or the CPRA, which went into effect on January 1, 2023, and significantly expanded the CCPA to incorporate additional GDPR-like provisions including requiring that the use, retention, and sharing of personal information of California residents be reasonably necessary and proportionate to the purposes of collection or processing, granting additional protections for sensitive personal information, and requiring greater disclosures related to notice to residents regarding retention of information. The CPRA also created a new enforcement agency - the California Privacy Protection Agency - whose sole responsibility is to enforce the CPRA, which will further increase compliance risk. The provisions in the CPRA may apply to some of our business activities. In addition, other states, including Virginia, Colorado, Utah, and Connecticut, already have passed state privacy laws. Virginia's privacy law also went into effect on January 1, 2023, and the laws in the other three states will go into effect later in the year. Other states will be considering these laws in the future, and Congress has also been debating passing a federal privacy law. These laws may impact our business activities, including our identification of research subjects, relationships with business partners and ultimately the marketing and distribution of our products.

Because of the breadth of these laws and the narrowness of the statutory exceptions and regulatory safe harbors available under such laws, it is possible that some of Carisma's current or future business activities, including certain clinical research, sales, and marketing practices and the provision of certain items and services to Carisma's customers, could be subject to challenge under one or more of such privacy and data security laws. The heightening compliance environment and the need to build and maintain robust and secure systems to comply with different privacy compliance and/or reporting requirements in multiple jurisdictions could increase the possibility that a healthcare company may fail to comply fully with one or more of these requirements. If Carisma's operations are found to be in violation of any of the privacy or data security laws or regulations described above that are applicable to Carisma, or any other laws that apply to Carisma, Carisma may be subject to penalties, including potentially significant criminal, civil, and administrative penalties, damages, fines, imprisonment, contractual damages, reputational harm, diminished profits and future earnings, additional reporting requirements, and/or oversight if Carisma becomes subject to a consent decree or similar agreement to resolve allegations of non-compliance with these laws, and the curtailment or restructuring of Carisma's operations, any of which could adversely affect Carisma's ability to operate its business and its results of operations. To the extent that any of Carisma's product candidates, once approved, are sold in a foreign country, Carisma may be subject to similar foreign laws.

Patent Term Restoration and Extension

In the United States, a patent claiming a new biologic product, its method of use or its method of manufacture may be eligible for a limited patent term extension under the Hatch-Waxman Act, which permits a patent extension of up to five years for patent term lost during product development and FDA regulatory review. Assuming grant of the patent for which the extension is sought, the restoration period for a patent covering a product is typically one-half the time between the effective date of the IND clearing clinical studies and the submission date of the BLA, plus the time between the submission date of the BLA and the ultimate approval date. Patent term restoration cannot be used to extend the remaining term of a patent past a total of 14 years from the product's approval date in the United States. Only one patent applicable to an approved product is eligible for the extension, and the application for the extension must be submitted prior to the expiration of the patent for which extension is sought. A patent that covers multiple products for which approval is sought can only be extended in connection with one of the approvals. The USPTO reviews and approves the application for any patent term extension in consultation with the FDA.

FDA Approval of Companion Diagnostics

In August 2014, the FDA issued final guidance clarifying the requirements that will apply to approval of therapeutic products and *in vitro* companion diagnostics. According to the guidance, for novel drugs, a companion diagnostic device and its corresponding therapeutic should be approved or cleared contemporaneously by the FDA for the use indicated in the therapeutic product's labeling. Approval or clearance of the companion diagnostic device will ensure that the device has been adequately evaluated and has adequate performance characteristics in the intended population. In July 2016, the FDA issued a draft guidance intended to assist sponsors of the drug therapeutic and *in vitro* companion diagnostic device on issues related to co-development of the products. The 2014 guidance also explains that a companion diagnostic device used to make treatment decisions in clinical trials of a biologic product candidate generally will be considered an investigational device, unless it is employed for an intended use for which the device is already approved or cleared. If used to make critical treatment decisions, such as patient selection, the diagnostic device generally will be considered a significant risk device under the FDA's Investigational Device Exemption, or IDE, regulations. Thus, the sponsor of the diagnostic device will be required to comply with the IDE regulations. According to the guidance, if a diagnostic device and a product are to be studied together to support their respective approvals, both products can be studied in the same investigational study, if the study meets both the requirements of the IDE regulations and the IND regulations. The guidance provides that depending on the details of the study plan and subjects, a sponsor may seek to submit an IND alone, or both an IND and an IDE.

In April 2020, the FDA issued additional guidance which describes considerations for the development and labeling of companion diagnostic devices to support the indicated uses of multiple biological oncology products, when appropriate. The 2020 guidance expands on the policy statement in the 2014 guidance by recommending that companion diagnostic developers consider a number of factors when determining whether their test could be developed, or the labeling for approved companion diagnostics could be revised through a supplement, to support a broader labeling claim such as use with a specific group of oncology therapeutic products (rather than listing an individual therapeutic product(s)).

Under the FDCA, *in vitro* diagnostics, including companion diagnostics, are regulated as medical devices. In the United States, the FDCA and its implementing regulations, and other federal and state statutes and regulations govern, among other things, medical device design and development, pre-clinical and clinical testing, premarket clearance or approval, registration and listing, manufacturing, labeling, storage, advertising and promotion, sales and distribution, export and import, and post market surveillance. Unless an exemption applies, diagnostic tests require marketing clearance or approval from the FDA prior to commercial distribution.

The FDA previously has required *in vitro* companion diagnostics intended to select the patients who will respond to the product candidate to obtain pre-market approval, or PMA, simultaneously with approval of the therapeutic product candidate. The PMA process, including the gathering of clinical and pre-clinical data and the submission to and review by the FDA, can take several years or longer. It involves a rigorous premarket review during which the sponsor must prepare and provide the FDA with reasonable assurance of the device's safety and effectiveness and information about the device and its components regarding, among other things, device design, manufacturing and labeling. PMA applications are subject to an application fee. For federal fiscal year 2023, the standard fee is $441,547 and the small business fee is $110,387.

Coverage, Pricing, and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which Carisma may seek regulatory approval by the FDA or other government authorities. In the United States and markets in other countries, patients who are prescribed treatments for their conditions and providers performing the prescribed services generally rely on third-party payors to reimburse all or part of the associated healthcare costs. Patients are unlikely to use any product candidates Carisma may develop unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of such product candidates. Even if any product candidates Carisma may develop are approved, sales of such product candidates will depend, in part, on the extent to which third-party payors, including government health programs in the United States such as Medicare and Medicaid, commercial health insurers, and managed care organizations, provide coverage, and establish adequate reimbursement levels for, such product candidates. The process for determining whether a payor will provide coverage for a product may be separate from the process for setting the price or reimbursement rate that the payor will pay for the product once coverage is approved. Third-party payors are increasingly challenging the prices charged, examining the medical necessity, and reviewing the cost-effectiveness of medical products and services and imposing controls to manage costs. Third-party payors may limit coverage to specific products on an approved list, also known as a formulary, which might not include all of the approved products for a particular indication.

In order to secure coverage and reimbursement for any product that might be approved for sale, a company may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of the product, in addition to the costs required to obtain FDA or other comparable marketing approvals. Nonetheless, product candidates may not be considered medically necessary or cost effective. A decision by a third-party payor not to cover any product candidates Carisma may develop could reduce physician utilization of such product candidates once approved and have a material adverse effect on Carisma's sales, results of operations and financial condition. Additionally, a payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Further, one payor's determination to provide coverage for a product does not assure that other payors will also provide coverage and reimbursement for the product, and the level of coverage and reimbursement can differ significantly from payor to payor. Third-party reimbursement and coverage may not be available to enable Carisma to maintain price levels sufficient to realize an appropriate return on Carisma's investment in product development. In addition, any companion diagnostic tests require coverage and reimbursement separate and apart from the coverage and reimbursement for their companion pharmaceutical or biological products. Similar challenges to obtaining coverage and reimbursement, applicable to pharmaceutical or biological products, will apply to any companion diagnostics.

The containment of healthcare costs also has become a priority of federal, state and foreign governments and the prices of pharmaceuticals have been a focus in this effort. Governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on reimbursement, and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit a company's revenue generated from the sale of any approved products. Coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which a company or its collaborators receive marketing approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

Outside the United States, ensuring adequate coverage and payment for any product candidates Carisma may develop will face challenges. Pricing of prescription pharmaceuticals is subject to governmental control in many countries. Pricing negotiations with governmental authorities can extend well beyond the receipt of regulatory marketing approval for a product and may require Carisma to conduct a clinical trial that compares the cost effectiveness of any product candidates Carisma may develop to other available therapies. The conduct of such a clinical trial could be expensive and result in delays in Carisma's commercialization efforts.

In the European Union, pricing and reimbursement schemes vary widely from country to country. Some countries provide that products may be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional studies that compare the cost-effectiveness of a particular product candidate to currently available therapies (so called health technology assessments) in order to obtain reimbursement or pricing approval. For example, the European Union provides options for its member states to restrict the range of products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. European Union member states may approve a specific price for a product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the product on the market. Other member states allow companies to fix their own prices for products but monitor and control prescription volumes and issue guidance to physicians to limit prescriptions. Recently, many countries in the European Union have increased the amount of discounts required on pharmaceuticals and these efforts could continue as countries attempt to manage healthcare expenditures, especially in light of the severe fiscal and debt crises experienced by many countries in the European Union. The downward pressure on healthcare costs in general, particularly prescription products, has become intense. As a result, increasingly high barriers are being erected to the entry of new products. Political, economic, and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various European Union member states, and parallel trade (arbitrage between low-priced and high-priced member states), can further reduce prices. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of Carisma's products, if approved in those countries.

Healthcare Law and Regulation

Healthcare providers and third-party payors play a primary role in the recommendation and prescription of pharmaceutical products that are granted marketing approval. Arrangements with providers, consultants, third-party payors, and customers are subject to broadly applicable fraud and abuse, anti-kickback, false claims laws, reporting of payments to physicians and teaching physicians and patient privacy laws and regulations and other healthcare laws and regulations that may constrain Carisma's business and/or financial arrangements. Restrictions under applicable federal and state healthcare laws and regulations, include the following:

- the U.S. federal Anti-Kickback Statute, which prohibits, among other things, persons and entities from knowingly and willfully soliciting, offering, paying, receiving, or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made, in whole or in part, under a federal healthcare program such as Medicare and Medicaid;

- the federal civil and criminal false claims laws, including the civil False Claims Act, and civil monetary penalties laws, which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false, fictitious, or fraudulent or knowingly making, using, or causing to made or used a false record or statement to avoid, decrease, or conceal an obligation to pay money to the federal government;

- the Foreign Corrupt Practices Act, which prohibits companies and their intermediaries from making, or offering or promising to make improper payments to non-U.S. officials for the purpose of obtaining or retaining business or otherwise seeking favorable treatment; and

- the federal transparency requirements under the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively the ACA, which require certain manufacturers of drugs, devices, biologics and medical supplies to report annually to the Centers for Medicare & Medicaid Services, or CMS, within the U.S. Department of Health and Human Services, information related to payments and other transfers of value made by that entity to physicians, other healthcare providers, and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members.

Some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring pharmaceutical manufacturers to report information related to payments to physicians and other healthcare providers or marketing expenditures. In addition, certain state and local laws require drug manufacturers to register pharmaceutical sales representatives in the jurisdiction. State and foreign laws also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

If Carisma's operations are found to be in violation of any of these laws or any other governmental regulations that may apply to Carisma, Carisma may be subject to significant civil, criminal, and administrative penalties, damages, fines, disgorgement, exclusion from government funded healthcare programs, such as Medicare and Medicaid, integrity oversight and reporting obligations, and the curtailment or restructuring of Carisma's operations.

Healthcare Reform

A primary trend in the U.S. healthcare industry and elsewhere is cost containment. There have been a number of federal and state proposals during the last few years regarding the pricing of pharmaceutical and biopharmaceutical products, limiting coverage and reimbursement for drugs and other medical products, government control and other changes to the healthcare system in the United States.

In March 2010, the United States Congress enacted the ACA, which, among other things, includes changes to the coverage and payment for products under government healthcare programs. Other legislative changes have been proposed and adopted in the United States since the ACA was enacted. For example, in August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2012 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of up to 2% per fiscal year, which will remain in effect through 2031 pursuant to the Coronavirus Aid, Relief and Economic Security Act or CARES Act. The American Taxpayer Relief Act of 2012, which was enacted in January 2013, among other things, further reduced Medicare payments to several providers, including hospitals, imaging centers, and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. Under current legislation, the actual reductions in Medicare payments may vary up to 4%. Further, with passage of the Inflation Reduction Act, or the IRA, in August 2022, Congress extended the expansion of ACA premium tax credits through 2025. Those subsidies were originally extended through 2022 under the American Rescue Plan Act of 2021. These laws may result in additional reductions in Medicare and other healthcare funding and otherwise affect the prices Carisma may obtain for any of Carisma's product candidates for which Carisma may obtain regulatory approval or the frequency with which any such product candidate is prescribed or used.

Since enactment of the ACA, there have been, and continue to be, numerous legal challenges and Congressional actions to repeal and replace provisions of the law. For example, with enactment of the Tax Cuts and Jobs Act of 2017, or the TCJA, which was signed by President Trump on December 22, 2017, Congress repealed the "individual mandate." The repeal of this provision, which requires most Americans to carry a minimal level of health insurance, became effective in 2019 Further, on December 14, 2018, a U.S. District Court judge in the Northern District of Texas ruled that the individual mandate portion of the PPACA is an essential and inseverable feature of the ACA and therefore because the mandate was repealed as part of the Tax Act, the remaining provisions of the ACA are invalid as well. The U.S. Supreme Court heard this case on November 10, 2020 and, on June 17, 2021, dismissed this action after finding that the plaintiffs do not have standing to challenge the constitutionality of the ACA. Litigation and legislation over the ACA are likely to continue, with unpredictable and uncertain results.

Although the previous administration took executive actions to undermine or delay implementation of the ACA, those actions were rescinded with issuance of an Executive Order on January 28, 2021, by President Biden which directs federal agencies to reconsider rules and other policies that limit Americans' access to health care, and consider actions that will protect and strengthen that access. Under this Executive Order, federal agencies are directed to re-examine: policies that undermine protections for people with pre-existing conditions, including complications related to COVID-19; demonstrations and waivers under Medicaid and the ACA that may reduce coverage or undermine the programs, including work requirements; policies that undermine the Health Insurance Marketplace or other markets for health insurance; policies that make it more difficult to enroll in Medicaid and the ACA; and policies that reduce affordability of coverage or financial assistance, including for dependents.

The prices of prescription pharmaceuticals have also been the subject of considerable discussion in the United States. There have been several recent U.S. congressional inquiries, as well as proposed and enacted state and federal legislation designed to, among other things, bring more transparency to pharmaceutical pricing, review the relationship between pricing and manufacturer patient programs, and reduce the costs of pharmaceuticals under Medicare and Medicaid. In 2020, President Trump issued several executive orders intended to lower the costs of prescription products and certain provisions in these orders have been incorporated into regulations. These regulations include an interim final rule implementing a most favored nation model for prices that would tie Medicare Part B payments for certain physician-administered pharmaceuticals to the lowest price paid in other economically advanced countries, effective January 1, 2021. That rule, however, has been subject to a nationwide preliminary injunction and, on December 29, 2021, CMS issued a final rule to rescind it. With issuance of this rule, CMS stated that it will explore all options to incorporate value into payments for Medicare Part B pharmaceuticals and improve beneficiaries' access to evidence-based care.

In addition, in October 2020, HHS and the FDA published a final rule allowing states and other entities to develop a Section 804 Importation Program, or SIP, to import certain prescription products from Canada into the United States. The final rule is currently the subject of ongoing litigation, but at least six states (Vermont, Colorado, Florida, Maine, New Mexico, and New Hampshire) have passed laws allowing for the importation of products from Canada with the intent of developing SIPs for review and approval by the FDA. Further, on November 20, 2020, HHS finalized a regulation removing safe harbor protection for price reductions from pharmaceutical manufacturers to plan sponsors under Part D, either directly or through pharmacy benefit managers, unless the price reduction is required by law. The final rule would eliminate the current safe harbor for Medicare drug rebates and create new safe harbors for beneficiary point-of-sale discounts and pharmacy benefit manager service fees. It originally was set to go into effect on January 1, 2022, but with passage of the IRA has been delayed by Congress to January 1, 2032.

More recently, on August 16, 2022, the IRA was signed into law by President Biden. The new legislation has implications for Medicare Part D, which is a program available to individuals who are entitled to Medicare Part A or enrolled in Medicare Part B to give them the option of paying a monthly premium for outpatient prescription drug coverage. Among other things, the IRA requires manufacturers of certain drugs to engage in price negotiations with Medicare (beginning in 2026), with prices that can be negotiated subject to a cap; imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation (first due in 2023); and replaces the Part D coverage gap discount program with a new discounting program (beginning in 2025). The IRA permits the Secretary of the HHS to implement many of these provisions through guidance, as opposed to regulation, for the initial years.

Specifically, with respect to price negotiations, Congress authorized Medicare to negotiate lower prices for certain costly single-source drug and biologic products that do not have competing generics or biosimilars and are reimbursed under Medicare Part B and Part D. CMS may negotiate prices for ten high-cost drugs paid for by Medicare Part D starting in 2026, followed by 15 Part D drugs in 2027, 15 Part B or Part D drugs in 2028, and 20 Part B or Part D drugs in 2029 and beyond. This provision applies to drug products that have been approved for at least 9 years and biologics that have been licensed for 13 years, but it does not apply to drugs and biologics that have been approved for a single rare disease or condition. Further, the legislation subjects drug manufacturers to civil monetary penalties and a potential excise tax for failing to comply with the legislation by offering a price that is not equal to or less than the negotiated "maximum fair price" under the law or for taking price increases that exceed inflation. The legislation also requires manufacturers to pay rebates for drugs in Medicare Part D whose price increases exceed inflation. The new law also caps Medicare out-of-pocket drug costs at an estimated $4,000 a year in 2024 and, thereafter beginning in 2025, at 2,000 a year.

On July 9, 2021, President Biden signed Executive Order 14063, which focuses on, among other things, the price of pharmaceuticals. The Order directs HHS to create a plan within 45 days to combat "excessive pricing of prescription pharmaceuticals and enhance domestic pharmaceutical supply chains, to reduce the prices paid by the federal government for such pharmaceuticals, and to address the recurrent problem of price gouging." On September 9, 2021, HHS released its plan to reduce pharmaceutical prices. The key features of that plan are to: (a) make pharmaceutical prices more affordable and equitable for all consumers and throughout the health care system by supporting pharmaceutical price negotiations with manufacturers; (b) improve and promote competition throughout the prescription pharmaceutical industry by supporting market changes that strengthen supply chains, promote biosimilars, and increase transparency; and (c) foster scientific innovation to promote better healthcare and improve health by supporting public and private research and making sure that market incentives promote discovery of valuable and accessible new treatments.

At the state level, individual states are increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. A number of states, for example, require pharmaceutical manufacturers and other entities in the supply chain, including health carriers, pharmacy benefit managers, wholesale distributors, to disclose information about pricing of pharmaceuticals. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other healthcare programs. These measures could reduce the ultimate demand for Carisma's products, once approved, or put pressure on Carisma's product pricing. Carisma expects that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for Carisma's product candidates or additional pricing pressures.

Employees and Human Capital Resources

As of March 7, 2023, Carisma had 96 full-time employees, including a total of 34 employees with M.D. or Ph.D. degrees. Of these full-time employees, 87 are engaged in research and development activities. None of Carisma's employees are represented by labor unions or covered by collective bargaining agreements. Carisma considers its relationship with its employees to be good.

Carisma's human capital objectives are focused on attracting, developing, and retaining talent. Cash compensation plans and equity grants are designed to attract, retain and to motivate employees, directors, and select consultants to achieve our corporate objectives.

Facilities

Carisma's principal facilities consist of office and laboratory space in Philadelphia, Pennsylvania. Carisma occupies approximately 4,369 square feet of office space under a lease that is expected to expire in January 2030 and approximately 3,600 square feet of laboratory space under a lease that expires in October 2023. Carisma believes that its facilities are sufficient to meet its current needs.

Legal Proceedings

Carisma is currently not a party to any material legal proceedings.

Exhibit 99.3

RISK FACTORS

Investing in Carisma Therapeutics Inc., or Carisma, securities involves a high degree of risk. You should carefully consider the risk factors set forth below and under "Risk Factors" in Carisma's Annual Report on Form 10-K for the year ended December 31, 2022 as updated by our subsequent filings under the Securities Exchange Act of 1934, as amended, or the Exchange Act, before deciding whether to purchase Carisma securities. The risks and uncertainties we describe below and in the documents mentioned above are not the only ones we face. Additional risks and uncertainties not presently known to us could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our securities, and the occurrence of any of these risks might cause you to lose all or part of your investment.

Summary of Risk Factors

- Carisma has incurred significant losses since its inception. Carisma expects to continue to incur significant expenses and operating losses for the foreseeable future and may never achieve or maintain profitability.
- Carisma has never generated revenue from product sales and may never achieve or maintain profitability.
- Carisma is heavily dependent on the success of its lead product candidate, CT-0508, which will require significant clinical testing before it can seek marketing approval and potentially launch commercial sales. If CT-0508 does not receive marketing approval or is not successfully commercialized, or if there is significant delay in doing so, Carisma's business will be harmed.
- Carisma will need substantial additional funding for its continuing operations. If Carisma is unable to raise capital when needed or on acceptable terms, it could be forced to delay, reduce or eliminate its discovery or product development programs or commercialization efforts.
- Cell therapy is a rapidly evolving area of science, and the approach Carisma is taking to discover and develop product candidates by utilizing genetically modified macrophages is novel and may never lead to approved or marketable products.
- Even if any of Carisma's product candidates receives marketing approval, it may fail to achieve the degree of market acceptance by physicians, patients, third-party payors and others in the medical community necessary for commercial success, and the market opportunity for any of its product candidates, if approved, may be smaller than it estimates.
- Carisma relies, and expects to continue to rely, on third parties to conduct its clinical trials, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials, which may prevent or delay Carisma's ability to seek or obtain marketing approval for or commercialize its product candidates or otherwise harm its business. If Carisma is not able to maintain these third-party relationships or if these arrangements are terminated, it may have to alter its development and commercialization plans and its business could be adversely affected.
- If Carisma is unable to obtain, maintain and enforce patent protection for its technology and product candidates or if the scope of the patent protection obtained is not sufficiently broad, its competitors could develop and commercialize technology and products similar or identical to Carisma's, and its ability to successfully develop and commercialize its technology and product candidates may be adversely affected and Carisma may not be able to compete effectively in its market.

- The market price of Carisma's common stock may be volatile, and the market price of Carisma's common stock may drop following the merger of Carisma.
- Carisma will incur additional costs and increased demands upon management as a result of complying with the laws and regulations affecting public companies.
- Once Carisma is no longer a "smaller reporting company" or otherwise no longer qualifies for applicable exemptions, Carisma will be subject to additional laws and regulations affecting public companies that will increase Carisma's costs and the demands on management and could harm Carisma's operating results.
- Provisions in Carisma's certificate of incorporation and bylaws and provisions under Delaware law could make an acquisition of Carisma, which may be beneficial to its stockholders, more difficult and may prevent attempts by its stockholders to replace or remove its management.
- An active trading market for Carisma's common stock may not develop and its stockholders may not be able to resell their shares of common stock for a profit, if at all.

Risks Related to Carisma's Financial Position and Need for Additional Capital

Carisma has incurred significant losses since its inception. Carisma expects to continue to incur significant expenses and operating losses for the foreseeable future and may never achieve or maintain profitability.

Since inception, Carisma has incurred significant operating losses. CTx Operations, Inc.'s (f/k/a CARISMA Therapeutics Inc.), or CTx, net losses were $40.8 million for the year ended December 31, 2021 and $28.3 million for the year ended December 31, 2020. As of September 30, 2022, CTx had $70.6 million in cash, cash equivalents and marketable securities and an accumulated deficit of $141.5 million. To date, Carisma has not yet commercialized any products or generated any revenue from product sales and has financed its operations primarily with proceeds from sales of Carisma's preferred stock, proceeds from Carisma's collaboration with Moderna, research tax credits and convertible debt financing. Carisma has devoted substantially all of its financial resources and efforts to pursuing discovery, research and development of its product candidates. Carisma is still in the early stages of development of its lead product candidate, CT-0508, and initiated its first clinical trial in 2021.

Carisma expects to continue to incur significant expenses and operating losses for the foreseeable future, including costs associated with operating as a public company. Carisma anticipates that its expenses will increase substantially if and as it:

- enhances the capabilities of its CAR-M platform;
- conducts its ongoing Phase 1 clinical trial of CT-0508;
- prepares for, initiates and conducts a planned clinical trial utilizing CT-0508 in combination with pembrolizumab;
- develops other CT-0508 combination studies;
- advances CT-0508 for additional indications or any other product candidate into clinical development;
- prepares for, initiates and conducts a planned clinical trial of CT-0525 for solid tumors that overexpress HER2;
- prepares for, initiates and conducts a planned clinical trial of CT-1119 for advanced mesothelin-positive solid tumors;
- prepares for, initiates and conducts a planned clinical trial of CT-0729 for prostrate-specific membrane antigen positive castrate resistant prostate cancer;
- conducts discovery and pre-clinical testing of the development of *in vivo* CAR-M therapeutics for up to twelve oncology targets, as well as multiple other targets and indications;
- conducts discovery and pre-clinical testing of its autologous cell therapy pipeline to gather information to apply to the development of off-the-shelf engineered macrophage therapeutics;
- develops iPSC-derived iCAR-M, or iCAR-M, and other macrophage therapies;
- develops *in vivo* reprogrammed LNP/mRNA CAR-M therapies for cancer;
- develops viral vectors to effectively engineer human monocytes and macrophages, including the Vpx lentiviral vector and Carisma's Ad5f35 vector;

- conducts discovery and pre-clinical testing of other product candidates;
- seeks marketing approval for CT-0508 or any other product candidate if it successfully completes clinical trials;
- scales up its external manufacturing capabilities and capabilities to support clinical trials of CT-0508 or any other product candidates and for commercialization of any product candidate for which it may obtain marketing approval;
- establishes a sales, marketing and distribution infrastructure to commercialize any product candidate for which it may obtain marketing approval;
- in-licenses or acquires additional technologies or product candidates;
- makes any payments under its existing or future strategic collaboration agreements, global exclusive rights licensing agreements or sponsored research agreements, including with Moderna, University of Pennsylvania and New York University;
- maintains, expands, enforces and protects its intellectual property portfolio;
- hires additional clinical, regulatory, manufacturing, quality control, development and scientific personnel; and
- adds operational, financial and management information systems and personnel, including personnel to support its discovery, product development and planned future commercialization efforts and its operations as a public company.

Because of the numerous risks and uncertainties associated with pharmaceutical product development, Carisma is unable to accurately predict the timing or amount of increased expenses or when, or if, it will be able to achieve or maintain profitability. Carisma's expenses could increase beyond its expectations if, among other things:

- Carisma is required by regulatory authorities in the United States, Europe or other jurisdictions to perform trials or studies in addition to, or different than, those that it currently expects;
- there are any delays in establishing appropriate manufacturing arrangements for or completing the development of any of Carisma's product candidates; or
- there are any third-party challenges to Carisma's intellectual property or Carisma needs to defend against any intellectual property-related claim.

Even if Carisma obtains marketing approval for and is successful in commercializing one or more of its product candidates, Carisma expects to incur substantial additional discovery and product development and other expenditures to develop and market additional product candidates or to expand the approved indications of any marketed product. Carisma may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect its business. The size of Carisma's future net losses will depend, in part, on the rate of future growth of its expenses and Carisma's ability to generate revenue.

Carisma has never generated revenue from product sales and may never achieve or maintain profitability.

Carisma only recently initiated clinical development of its lead product candidate, CT-0508, and is in the pre-clinical testing stages for its other product candidates. Carisma expects that it will be a number of years, if ever, before it has a product candidate ready for commercialization. To become and remain profitable, Carisma must succeed in completing development of, obtaining marketing approval for and eventually commercializing, one or more products that generate significant revenue. The ability to achieve this success will require Carisma to be effective in a range of challenging activities, including completing clinical development of CT-0508, completing discovery, pre-clinical testing and clinical development of CT-0508 in the combination setting and for additional indications, timely filing and receiving acceptance of its Investigational New Drug applications, or INDs, in order to commence its planned or future clinical trials, including for CT-0525, CT-1119 and, CT-0729, successfully enrolling subjects in, and completing, its ongoing and planned clinical trials, scaling up its manufacturing processes and capabilities to support clinical trials of CT-0508 or of other product candidates, obtaining marketing approval for CT-0508 or any other product candidates, manufacturing, marketing and selling any products for which Carisma may obtain marketing approval and maintaining a continued acceptable safety profile of its products following approval. Carisma may never succeed in these activities and, even if it does, may never generate revenues that are significant enough to achieve profitability.

Even if Carisma does achieve profitability, it may not be able to sustain or increase profitability on a quarterly or annual basis. Carisma's failure to become and remain profitable would depress the value of its company and could impair its ability to raise capital, expand its business, maintain its discovery and product development efforts, diversify its pipeline of product candidates or even continue its operations.

Carisma is heavily dependent on the success of its lead product candidate, CT-0508, and its follow on HER2 product candidate, CT-0525, which will both require significant clinical testing before Carisma can seek marketing approval and potentially launch commercial sales. If CT-0508 or CT-0525 do not receive marketing approval or are not successfully commercialized, or if there is significant delay in doing so, Carisma's business will be harmed.

Carisma only recently initiated its first clinical trial, has no products that are approved for commercial sale and may never be able to develop marketable products. Carisma expects that a substantial portion of its efforts and expenditures for the foreseeable future will be devoted to CT-0508 and related combination sub-studies of the synergistic potential and utility of CT-0508. Carisma's business currently depends heavily on the successful development, marketing approval and commercialization of CT-0508 and the success of related combination sub-studies. Carisma cannot be certain that CT-0508 or any combination therapy will achieve success in ongoing or future clinical trials, receive marketing approval or be successfully commercialized. Carisma is also currently in the pre-clinical stage for another product candidate, CT-0525, which is also intended to treat solid tumors that overexpress HER2. By leveraging its discovery engine and preliminary clinical data from its Phase 1 clinical trial of CT-0508, Carisma is building upon its CAR-M platform to generate next-generation therapeutics that may increase potential efficacy and patient access.

If Carisma were required to discontinue development of CT-0508 or CT-0525, or if CT-0508 or CT-0525 do not receive marketing approval for one or more of the indications Carisma pursues, fail to achieve significant market acceptance, or fail to receive adequate reimbursement, Carisma may be delayed by many years in its ability to achieve profitability, if ever, and may not be able to generate sufficient revenue to continue its business.

Carisma will need substantial additional funding for its continuing operations. If Carisma is unable to raise capital when needed or on acceptable terms, it could be forced to delay, reduce or eliminate its discovery or product development programs or commercialization efforts.

Carisma expects to devote substantial financial resources to its ongoing and planned activities, particularly as it conducts its ongoing clinical trial of CT-0508 and pursues related combination strategies, prepares for, initiates and conducts its planned clinical trials of CT-0525, CT-1119 and CT-0729 and advances its discovery programs and continues its product development efforts. Carisma expects its expenses to increase substantially in connection with its ongoing activities, particularly as it advances its pre-clinical activities and clinical trials. In addition, if Carisma obtains marketing approval for CT-0508 or any other product candidate it is developing or develops in the future, it expects to incur significant commercialization expenses related to product manufacturing, sales, marketing and distribution. Furthermore, Carisma will incur additional costs associated with operating as a public company. Accordingly, Carisma will need to obtain substantial additional funding in connection with its continuing operations. If Carisma is unable to raise capital or obtain adequate funds when needed or on acceptable terms, it may be required to delay, limit, reduce or terminate its discovery and product development programs or any future commercialization efforts or grant rights to develop and market product candidates that it would otherwise prefer to develop and market itself. In addition, attempting to secure additional financing may divert the time and attention of Carisma management from day-to-day activities and distract from its discovery and product development efforts.

- Carisma's future capital requirements will depend on many factors, including:
- the progress, costs and results of its ongoing clinical trial of CT-0508 and other planned and future clinical trials;
- the scope, progress, costs and results of pre-clinical testing and clinical trials of CT-0508 for additional combinations, targets and indications;
- the number of and development requirements for additional indications for CT-0508 or for any other product candidates;
- the success of its collaborations with Moderna or others;

- its ability to scale up its manufacturing processes and capabilities to support clinical trials of CT-0508 and other product candidates it is developing and develops in the future;
- the costs, timing and outcome of regulatory review of CT-0508 and other product candidates it is developing and may develop in the future;
- potential changes in the regulatory environment and enforcement rules;
- its ability to establish and maintain strategic collaborations, licensing or other arrangements and the financial terms of such arrangements;
- the payment of license fees and other costs of its technology license arrangements;
- the costs and timing of future commercialization activities, including product manufacturing, sales, marketing and distribution, for CT-0508 and other product candidates it is developing and may develop in the future for which it may receive marketing approval;
- its ability to obtain and maintain acceptance of any approved products by patients, the medical community and third-party payors;
- the amount and timing of revenue, if any, received from commercial sales of CT-0508 and any other product candidates it is developing or develops in the future for which it receives marketing approval;
- potential changes in pharmaceutical pricing and reimbursement infrastructure;
- the availability of raw materials for use in production of its product candidates;
- the costs and timing of preparing, filing and prosecuting patent applications, maintaining and enforcing its intellectual property and proprietary rights and defending any intellectual property-related claims; and
- the extent to which it in-licenses or acquires additional technologies or product candidates.

Carisma management has concluded that there is substantial doubt about Carisma's ability to continue as a going concern. As a result, Carisma management has included disclosures in Note 2 of the consolidated financial statements and Carisma's independent auditor included an explanatory paragraph in its report on Carisma's consolidated financial statements as of and for the year ended December 31, 2021 with respect to this uncertainty.

As of September 30, 2022, CTx had cash, cash equivalents and marketable securities of $70.6 million. Immediately prior to the consummation of the merger with Sesen Bio, or the merger, certain investors purchased shares of CTx common stock for an aggregate purchase price of approximately $30.6 million, which was converted into the right to receive a number of shares of Carisma common stock equal to the exchange ratio in connection with the merger. Carisma believes that it has cash, cash equivalents and marketable securities sufficient to sustain its operating expenses and capital expenditure requirements at least through the end of 2024. However, Carisma has based this estimate on assumptions that may prove to be wrong, and its operating plan may change as a result of many factors currently unknown to Carisma. In addition, changing circumstances could cause Carisma to consume capital significantly faster than it currently anticipates, and Carisma may need to spend more than currently expected because of circumstances beyond its control. As a result, Carisma could deplete its capital resources sooner than it currently expects. In addition, because the successful development of CT-0508, CT-0525, CT-1119, CT-0729 and any combination studies or other product candidates that it pursues is highly uncertain, at this time Carisma cannot reasonably estimate or know the nature, timing and costs of the efforts that will be necessary to complete the development of any product candidate.

Identifying potential product candidates and conducting pre-clinical testing and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and Carisma may never generate the necessary data or results required to obtain marketing approval and achieve product sales. In addition, Carisma's product candidates, if approved, may not achieve commercial success. Carisma will not generate commercial revenues unless and until it can achieve sales of products, which it does not anticipate for a number of years, if at all. Accordingly, Carisma will need to obtain substantial additional financing to achieve its business objectives. Adequate additional financing may not be available to Carisma on acceptable terms, or at all, and may be impacted by the economic climate and market conditions. For example, market volatility resulting from the COVID-19 pandemic, any other future infectious diseases, epidemics or pandemics or general U.S. or global economic or market conditions could also adversely impact Carisma's ability to access capital as and when needed. Alternatively, Carisma may seek additional capital due to favorable market conditions or strategic considerations, even if it believes it has sufficient funds for its current or future operating plans.

Carisma's limited operating history may make it difficult for you to evaluate the success of Carisma's business to date and to assess Carisma's future viability.

Carisma was formed as Carma Therapeutics LLC, a Pennsylvania limited liability company, in April 2016 and converted to a Delaware corporation in May 2017. In connection with the merger, CARISMA Therapeutics Inc. merged with and into a wholly-owned subsidiary of Sesen Bio and was renamed "CTx Operations, Inc." Sesen Bio's name was changed to "Carisma Therapeutics Inc." Following the completion of the merger, the business conducted by the public company became primarily the business conducted by Carisma. Carisma is a clinical-stage cell therapy company with a limited operating history. Cell therapy product development is a highly speculative undertaking and involves a substantial degree of risk. Carisma's operations prior to the merger have been limited to organizing and staffing its company, business planning, capital raising, establishing and maintaining its intellectual property portfolio, building its pipeline of product candidates, conducting drug discovery activities, undertaking pre-clinical studies, manufacturing process development studies, conducting early-stage clinical trials, and providing general and administrative support for these operations. Carisma's prospects must be considered in light of the uncertainties, risks, expenses and difficulties frequently encountered by companies in their early stages of operations. Carisma has not yet demonstrated its ability to successfully develop any product candidate, obtain marketing approvals, manufacture a commercial scale product or arrange for a third party to do so on its behalf, or conduct sales, marketing and distribution activities necessary for successful product commercialization. Consequently, any predictions you make about Carisma's future success or viability may not be as accurate as they could be if Carisma had a longer operating history or a history of successfully developing, obtaining marketing approval for and commercializing products.

In addition, as Carisma's business grows, Carisma may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown obstacles. Carisma will need to transition at some point from a company with a discovery and pre-clinical and clinical focus to a company capable of supporting commercial activities. Carisma may not be successful in such a transition.

As Carisma continues to build its business, Carisma expects its financial condition and operating results to fluctuate significantly from quarter to quarter and year to year due to a variety of factors, many of which are beyond Carisma's control. Accordingly, you should not rely upon the results of any quarterly or annual periods as indications of future operating performance.

The COVID-19 pandemic may affect Carisma's pre-clinical studies and clinical trials, disrupt regulatory activities, disrupt Carisma's manufacturing and supply chain or have other adverse effects on Carisma's business and operations.

The COVID-19 pandemic has caused many governments to implement measures to slow the spread of the virus through quarantines, travel restrictions, heightened border scrutiny and other measures. The pandemic and government measures taken in response have also had a significant impact, both directly and indirectly, on businesses and commerce, as worker shortages have occurred; supply chains have been disrupted; facilities and production have been suspended; and demand for certain goods and services, such as medical services and supplies, has spiked, while demand for other goods and services, such as travel, has fallen. The future progression of the pandemic and its effects on Carisma's business and operations are uncertain.

Carisma and the third-party manufacturers and clinical research organizations that it engages may face disruptions that could affect Carisma's ability to initiate and complete pre-clinical studies or clinical trials, including disruptions in procuring items that are essential for Carisma's discovery and product development activities, such as, for example, raw materials used in the manufacturing of its product candidates, laboratory supplies for its ongoing and planned pre-clinical studies and clinical trials, or animals that are used for pre-clinical testing, in each case, for which there may be shortages because of ongoing efforts to address the pandemic, or disruptions in Carisma's ability to obtain necessary site approvals or other delays at clinical trial sites.

As a result of the COVID-19 pandemic, Carisma may experience further disruptions that could severely impact Carisma's business, including:

- disruptions related to Carisma's ongoing and planned clinical trials or future clinical trials arising from delays in completing pre-clinical studies required to begin clinical development;
- manufacturing disruptions;

- the inability to obtain necessary site approvals or other delays at clinical trial sites;
- diversion of healthcare resources away from the conduct of clinical trials, including the diversion of hospitals serving as Carisma's clinical trial sites and hospital staff supporting the conduct of Carisma's clinical trials;
- interruption of key clinical trial activities, such as clinical trial site data monitoring, due to limitations on travel imposed or recommended by foreign, federal or state governments, employers and others;
- interruption of clinical trial subject visits and study procedures, which may impact the integrity of subject data and clinical study endpoints;
- interruption or delays in the operations of the United States Food and Drug Administration, or the FDA, or other regulatory authorities, which may impact review and approval timelines;
- limitations on employee resources that would otherwise be focused on the conduct of Carisma's pre-clinical studies and clinical trials, including because of sickness of employees or their families or the desire of employees to avoid contact with large groups of people;
- difficulties recruiting or retaining patients for Carisma's clinical trials if patients are affected by the virus or are fearful of visiting or traveling to clinical trial sites because of the virus; and
- risk that participants enrolled in its clinical trials will acquire COVID-19 while the clinical trial is ongoing, which could impact the results of the clinical trial, including by increasing the number of observed adverse events and refusal of the FDA, to accept data from clinical trials in these affected geographies.

The response to the COVID-19 pandemic may redirect resources with respect to regulatory and intellectual property matters in a way that would adversely impact its ability to pursue marketing approvals and protect its intellectual property. In addition, Carisma may face impediments to regulatory meetings and potential approvals due to measures intended to limit in-person interactions.

Furthermore, third parties, including manufacturers, medical institutions, clinical investigators, contract research organizations and consultants with whom Carisma conducts business, are similarly adjusting their operations and assessing their capacity in light of the COVID-19 pandemic. If these third parties continue to experience shutdowns or business disruptions, Carisma's ability to conduct its business in the manner and on the timelines presently planned could be materially and negatively impacted.

On January 30, 2023, the Biden Administration announced that it will end the public health emergency declarations related to COVID-19 on May 11, 2023. On January 31, 2023, the FDA indicated that it would soon issue a Federal Register notice describing how the termination of the public health emergency will impact the FDA's COVID-19 related guidance, including the clinical trial guidance and updates thereto. At this point, it is unclear how, if at all, these developments will impact Carisma's efforts to develop and commercialize its product candidates.

The COVID-19 pandemic continues to evolve and has already caused significant disruptions in the financial markets, and may continue to cause such disruptions, which could impact Carisma's ability to raise additional funds through public offerings and may also impact the volatility of Carisma's stock price and trading in its stock. Moreover, it is possible the pandemic will further significantly impact economies worldwide, which could result in adverse effects on Carisma's business and operations. Carisma cannot be certain what the overall impact of the COVID-19 pandemic will be on its business, and it has the potential to materially and adversely affect Carisma's business, financial condition, results of operations and prospects. To the extent the COVID-19 pandemic adversely affects Carisma's business, financial condition and results of operations, it may also have the effect of heightening many of the other risks and uncertainties described in this "Risk Factors" section.

Changes in tax law may adversely affect Carisma or its investors.

The rules dealing with U.S. federal, state and local income taxation are constantly under review by persons involved in the legislative process and by the IRS and the U.S. Treasury Department. Changes to tax laws (which changes may have retroactive application) could adversely affect Carisma or holders of Carisma's common stock. In recent years, many such changes have been made and changes are likely to continue to occur in the future. It cannot be predicted whether, when, in what form or with what effective dates tax laws, regulations and rulings may be enacted, promulgated or issued, which could result in an increase in Carisma's or its stockholders' tax liability or require changes in the manner in which Carisma operates in order to minimize or mitigate any adverse effects of changes in tax law. Prospective investors should consult their tax advisors regarding the potential consequences of changes in tax law on Carisma's business and on the ownership and disposition of Carisma common stock.

Carisma's ability to use its net operating loss carryforwards, or NOLs, and research and development tax credit carryforwards to offset future taxable income may be subject to certain limitations.

Prior to the merger, Carisma has a history of cumulative losses and anticipates that it will continue to incur significant losses in the foreseeable future. As a result, Carisma does not know whether or when it will generate taxable income necessary to utilize its NOLs or research and development tax credit carryforwards. As of December 31, 2021, CTx had federal, state and local NOLs of $76.4 million, $76.4 million and $71.2 million, respectively, and federal research and development tax credit carryforwards totaling $3.9 million.

In general, under Section 382 of the Code and corresponding provisions of state law, a corporation that undergoes an "ownership change," generally defined as a greater than 50 percentage point change (by value) in its equity ownership by certain stockholders over a three year period, is subject to limitations on its ability to utilize its pre-change NOLs and research and development tax credit carryforwards to offset future taxable income. Carisma has not conducted a study to assess whether any such ownership changes have occurred. Carisma may have experienced such ownership changes in the past and may experience such ownership changes in the future (which may be outside its control). As a result, if and to the extent Carisma earns net taxable income, its ability to use its pre-change NOLs and research and development tax credit carryforwards to offset such taxable income may be subject to limitations.

Risks Related to Carisma's Discovery Programs and Research and Development of Carisma's Product Candidates

Cell therapy is a rapidly evolving area of science, and the approach Carisma is taking to discover and develop product candidates by utilizing genetically modified macrophages is novel and may never lead to approved or marketable products.

Cell therapy has yet to be broadly applied to solid tumors, inflammatory disease, fibrotic disease or neurodegeneration. The discovery, research and development of engineered macrophages to treat disease is an emerging field and Carisma's CAR-M platform, which is the first CAR-M to be evaluated in a human clinical trial, is a relatively new technology. Carisma's future success depends on the successful development of this novel therapeutic approach. The scientific evidence to support the feasibility of developing product candidates based on these discoveries is both preliminary and limited. Carisma has only preliminary results from its Phase 1 clinical trial of CT-0508 and expects clinical updates in the next 18 months. As such, there may be adverse effects or limited favorable results from treatment with any of Carisma's current or future product candidates that it cannot predict at this time.

Carisma's success also depends on its successful application of its proprietary macrophage engineering platform in the combination setting and to other indications by reprogramming the target specificity of its CAR-M cell product and developing product candidates against a plethora of tumor associated antigens, including in therapeutic areas beyond oncology. However, Carisma's macrophage engineering platform may not allow it to generate new INDs to expand its pipeline on Carisma's anticipated timeline or in a cost-efficient manner or at all, which could cause the potential value of Carisma's business to decline and materially harm Carisma's business prospects.

As a result of these factors, it is more difficult for Carisma to predict the time and cost of product candidate development, and Carisma cannot predict whether the application of macrophage engineering platform will result in the development and marketing approval of any products. Any development problems Carisma experiences in the future related to its macrophage engineering platform or any of its discovery programs may cause significant delays or unanticipated costs or may prevent the development of a commercially viable product. Any of these factors may prevent Carisma from completing its clinical trials or pre-clinical studies or commercializing any product candidates it may develop on a timely or profitable basis, if at all.

Carisma is early in its development efforts. If Carisma is unable to commercialize its product candidates or experiences significant delays in doing so, its business will be materially harmed.

Carisma is early in its development efforts. Carisma initiated its first Phase 1 clinical trial of CT-0508 in 2021 and expects to evaluate a combination of CT-0508 with pembrolizumab in an ongoing Phase 1 clinical trial. Carisma expects to submit INDs for CT-0525 in the second half of 2023 and for CT-1119 in 2025. CT-0729 is still in the discovery stage.

Carisma's ability to generate revenues from product sales, which it does not expect will occur for a number of years, if ever, will depend heavily on the successful development, marketing approval and eventual commercialization of CT-0508, including in the combination setting, or one or more of its other product candidates, which may never occur. The success of CT-0508 and Carisma's other product candidates will depend on several factors, including the following:

- successfully completing pre-clinical studies;
- successfully initiating future clinical trials;
- successfully enrolling patients in and completing clinical trials;
- scaling up manufacturing processes and capabilities to support clinical trials of CT-0508 and any other product candidate;
- applying for and receiving marketing approvals from applicable regulatory authorities;
- obtaining and maintaining intellectual property protection and regulatory exclusivity for CT-0508 and any other product candidates it is developing or may develop in the future;
- making arrangements with third-party manufacturers, or establishing commercial manufacturing capabilities, for both clinical and commercial supplies of its product candidates;
- establishing sales, marketing and distribution capabilities and launching commercial sales of its products, if and when approved, whether alone or in collaboration with others;
- acceptance of CT-0508 and any other product candidates, if and when approved, by patients, the medical community and third-party payors;
- effectively competing with other therapies;
- obtaining and maintaining coverage, adequate pricing and adequate reimbursement from third-party payors, including government payors;
- maintaining, enforcing, defending and protecting its rights in its intellectual property portfolio;
- not infringing, misappropriating or otherwise violating others' intellectual property or proprietary rights; and
- maintaining a continued acceptable safety profile of its products following receipt of any marketing approvals.

If Carisma does not achieve one or more of these factors in a timely manner or at all, it could experience significant delays or an inability to successfully develop and commercialize its product candidates, which would materially harm Carisma's business. As a company, Carisma has limited experience in clinical development, having only recently advanced CT-0508 into an early-stage clinical trial. Any predictions about the future success or viability of CT-0508 or any product candidates Carisma is developing or may develop in the future may not be as accurate as they could be if Carisma had a history of conducting clinical trials.

Drug development involves a lengthy and expensive process, with an uncertain outcome. The results of pre-clinical studies and early clinical trials may not be predictive of future results. Carisma may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of CT-0508 or its other product candidates.

Carisma only recently initiated its first clinical trial of CT-0508 and its other product candidates are in pre-clinical development. The risk of failure for CT-0508 and Carisma's other product candidates is high. It is impossible to predict when or if CT-0508 or any of Carisma's other product candidates will prove effective or safe in humans or will receive marketing approval. Before obtaining marketing approval from regulatory authorities for the sale of a product candidate, Carisma must complete pre-clinical development and then conduct extensive clinical trials to demonstrate the safety and efficacy of such product candidate in humans. Clinical trials may fail to demonstrate that CT-0508 or any of Carisma's other product candidates are safe for humans and effective for indicated uses. Even if the clinical trials are successful, changes in marketing approval policies during the development period, changes in or the enactment or promulgation of additional statutes, regulations or guidance or changes in regulatory review for each submitted product application may cause delays in the approval or rejection of an application.

Before Carisma can commence clinical trials for a product candidate, it must complete extensive pre-clinical testing and studies, manufacturing process development studies, and analytical development studies that support its planned INDs and other applications to regulatory authorities in the United States or similar applications in other jurisdictions. Carisma cannot be certain of the timely completion or outcome of its pre-clinical testing and studies and cannot predict if the outcome of its pre-clinical testing and studies will ultimately support the further development of its current or future product candidates or whether regulatory authorities will accept its proposed clinical programs. As a result, Carisma may not be able to submit applications to initiate clinical development of product candidates on the timelines Carisma expects, if at all, and the submission of these applications may not result in regulatory authorities allowing clinical trials to begin. Furthermore, product candidates are subject to continued pre-clinical safety studies, which may be conducted concurrently with Carisma's clinical testing. The outcomes of these safety studies may delay the launch of or enrollment in future clinical trials and could impact Carisma's ability to continue to conduct its clinical trials.

Clinical testing is expensive, difficult to design and implement, can take many years to complete and is uncertain as to the outcome. Carisma cannot guarantee that any of its clinical trials will be conducted as planned or completed on schedule, or at all. A failure of one or more clinical trials can occur at any stage of testing, which may result from a multitude of factors, including, among other things, flaws in study design, dose selection issues, placebo effects, patient enrollment criteria and failure to demonstrate favorable safety or efficacy traits.

Moreover, pre-clinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in pre-clinical studies and clinical trials have nonetheless failed to obtain marketing approval of their products. Furthermore, the failure of any of Carisma's product candidates to demonstrate safety and efficacy in any clinical trial could negatively impact the perception of its other product candidates or cause regulatory authorities to require additional testing before approving any of its product candidates.

Carisma may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent its ability to receive marketing approval or commercialize any product candidates, including:

- regulators or institutional review boards, or IRBs, may not authorize Carisma or its investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site or at all;
- Carisma may experience delays in reaching, or fail to reach, agreement on acceptable clinical trial contracts or clinical trial protocols with prospective trial sites;
- regulators may determine that the planned design of Carisma's clinical trials is flawed or inadequate;
- clinical trials of Carisma's product candidates may produce negative or inconclusive results, and Carisma may decide, or regulators may require Carisma, to conduct additional clinical trials or abandon product development programs;
- Carisma may be unable to establish clinical endpoints that applicable regulatory authorities consider clinically meaningful, or, if Carisma seeks accelerated approval, biomarker efficacy endpoints that applicable regulatory authorities consider likely to predict clinical benefit;
- pre-clinical testing may produce results based on which Carisma may decide, or regulators may require Carisma, to conduct additional pre-clinical studies before it proceeds with certain clinical trials, limits the scope of its clinical trials, halt ongoing clinical trials or abandon product development programs;
- the number of patients required for clinical trials of Carisma's product candidates may be larger than it anticipates, enrollment in these clinical trials may be slower than Carisma anticipates or participants may drop out of these clinical trials at a higher rate than Carisma anticipates;
- third-party contractors may fail to comply with regulatory requirements or meet their contractual obligations to Carisma in a timely manner, or at all;
- Carisma may decide, or regulators or IRBs may require Carisma, to suspend or terminate clinical trials of its product candidates for various reasons, including noncompliance with regulatory requirements or a finding that the participants are being exposed to unacceptable health risks;
- regulators or IRBs may require Carisma to perform additional or unanticipated clinical trials to obtain approval or Carisma may be subject to additional post-marketing testing requirements to maintain marketing approval;
- regulators may revise the requirements for approving Carisma's product candidates, or such requirements may not be as it anticipates;
- the cost of clinical trials of Carisma's product candidates may be greater than it anticipates;

- the supply or quality of Carisma's product candidates or other materials necessary to conduct clinical trials of its product candidates may be insufficient or inadequate;
- Carisma's product candidates may have undesirable side effects or other unexpected characteristics, causing Carisma or its clinical investigators, regulators or IRBs to suspend or terminate the trials;
- regulators may withdraw their approval of a product or impose restrictions on its distribution; and
- business interruptions resulting from the COVID-19 pandemic may result in adverse effects on Carisma's business and operations.

If Carisma is required to conduct additional clinical trials or other testing of its product candidates beyond those that it currently contemplates, if Carisma is unable to successfully complete clinical trials of its product candidates or other testing, if the results of these trials or tests are not positive or are only modestly positive, if there are safety concerns or if Carisma determines that the observed safety or efficacy profile would not be competitive in the marketplace, it may:

- incur unplanned costs;
- be delayed in obtaining marketing approval for its product candidates;
- not obtain marketing approval at all;
- obtain marketing approval in some countries and not in others;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings;
- be subject to additional post-marketing testing requirements; or
- have the product removed from the market after obtaining marketing approval.

Carisma's product development costs will also increase if it experiences delays in pre-clinical studies or clinical trials or in obtaining marketing approvals. Carisma does not know whether any of its pre-clinical studies or clinical trials will begin as planned, will need to be restructured or will be completed on schedule, or at all. Carisma may also determine to change the design or protocol of one or more of its clinical trials, including to add additional patients or arms, which could result in increased costs and expenses or delays. Significant pre-clinical study or clinical trial delays also could shorten any periods during which Carisma may have the exclusive right to commercialize its product candidates or allow its competitors to bring products to market before Carisma does and impair Carisma's ability to successfully commercialize its product candidates and may harm Carisma's business and results of operations.

In addition, the FDA's and other regulatory authorities' policies with respect to clinical trials may change and additional government regulations may be enacted. If Carisma is slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies governing clinical trials, Carisma's development plans may be impacted. For example, in December 2022, with the passage of Food and Drug Omnibus Reform Act, or FDORA, Congress required sponsors to develop and submit a diversity action plan for each phase 3 clinical trial or any other "pivotal study" of a new drug or biological product. These plans are meant to encourage the enrollment of more diverse patient populations in late-stage clinical trials of FDA-regulated products. Specifically, actions plans must include the sponsor's goals for enrollment, the underlying rationale for those goals, and an explanation of how the sponsor intends to meet them. In addition to these requirements, the legislation directs the FDA to issue new guidance on diversity action plans.

Similarly, the regulatory landscape related to clinical trials in the European Union recently evolved. The European Union Clinical Trials Regulation, or CTR, which was adopted in April 2014 and repeals the European Union Clinical Trials Directive, became applicable on January 31, 2022. While the Clinical Trials Directive required a separate clinical trial application, or CTA, to be submitted in each member state, to both the competent national health authority and an independent ethics committee, the CTR introduces a centralized process and only requires the submission of a single application to all member states concerned. The CTR allows sponsors to make a single submission to both the competent authority and an ethics committee in each member state, leading to a single decision per member state. The assessment procedure of the CTA has been harmonized as well, including a joint assessment by all member states concerned, and a separate assessment by each member state with respect to specific requirements related to its own territory, including ethics rules. Each member state's decision is communicated to the sponsor via the centralized European Union portal. Once the CTA is approved, clinical study development may proceed. If Carisma is not able to adapt to these and other changes in existing requirements or the adoption of new requirements or policies governing clinical trials, Carisma's development plans may be impacted.

Further, cancer therapies are sometimes characterized as first-line, second-line, or third-line, and the FDA often approves new therapies initially only for second-line or third-line use. When cancer is detected early enough, first-line therapy, usually hormone therapy, surgery, radiation therapy or a combination of these, is sometimes adequate to cure the cancer or prolong life without a cure. Second- and third-line therapies are administered to patients when prior therapy is not effective. For any of Carisma's products that prove to be sufficiently beneficial, Carisma would expect to seek approval potentially as a first-line therapy, but any product candidates Carisma develops, even if approved, may not be approved for first-line therapy, and, prior to any such approvals, Carisma may have to conduct additional clinical trials.

The results of early-stage clinical trials and pre-clinical studies may not be predictive of future results. Initial success in clinical trials may not be indicative of results obtained when these trials are completed or in later stage trials.

The outcome of pre-clinical testing and early clinical trials may not be predictive of the success of later clinical trials, and preliminary or interim results of a clinical trial do not necessarily predict final results. In addition, initial success in clinical trials may not be indicative of results obtained when such trials are completed. In particular, the small number of patients in Carisma's ongoing early clinical trials may make the results of these trials less predictive of the outcome of later clinical trials. For example, even if successful, the results of Carisma's Phase 1 clinical trial of CT-0508 may not be predictive of the results of further clinical trials of CT-0508 or any of Carisma's other product candidates. Carisma's product candidates may also fail to show the desired safety and efficacy in clinical development despite positive results in pre-clinical studies or having successfully advanced through initial clinical trials.

Moreover, pre-clinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in pre-clinical studies and clinical trials have nonetheless failed to obtain marketing approval of their products. Carisma's current or future clinical trials may not ultimately be successful or support further clinical development of any of its product candidates and Carisma cannot assure you that any clinical trials that it may conduct will demonstrate consistent or adequate efficacy and safety to support marketing approval. There is a high failure rate for product candidates proceeding through clinical trials. Many companies in the biopharmaceutical industry have suffered significant setbacks in late-stage clinical trials even after achieving promising results in pre-clinical testing and earlier-stage clinical trials, and Carisma cannot be certain that it will not face similar setbacks. Any such setbacks in Carisma's clinical development could materially harm Carisma's business and results of operations.

Interim and preliminary results from Carisma's clinical trials that it announces or publishes from time to time may change as more participant data become available and are subject to audit and verification procedures, which could result in material changes in the final data.

From time to time, Carisma may announce or publish interim or preliminary results from its clinical trials, including its Phase 1 clinical trial of CT-0508. Interim results from clinical trials that Carisma may complete are subject to the risk that one or more of the clinical outcomes may materially change as participant enrollment continues and more participant data become available. Carisma also makes assumptions, estimations, calculations, and conclusions as part of its analyses of data, and Carisma may not have received or had the opportunity to fully evaluate all data. Preliminary or interim results also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data Carisma previously published. As a result, interim and preliminary data should be viewed with caution until the final data are available. Adverse differences between preliminary or interim data and final data could be material and could significantly harm Carisma's reputation and business prospects and may cause the trading price of Carisma common stock to fluctuate significantly.

If Carisma experiences delays or difficulties in the enrollment of patients in its clinical trials for CT-0508 or any of its other product candidates, its receipt of necessary marketing approvals could be delayed or prevented.

Identifying and qualifying patients to participate in clinical trials for CT-0508 and any other product candidates in the future is critical to Carisma's success. Successful and timely completion of clinical trials will require that Carisma enroll a sufficient number of patients who remain in the trial until its conclusion. Carisma may not be able to initiate or continue clinical trials for its product candidates if it is unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or similar regulatory authorities outside of the United States. In particular, group 2 for Carisma's Phase 1 clinical trial of CT-0508 is currently open for enrollment with an additional nine patients to be dosed in the study and Carisma is preparing to advance other products into clinical development. In addition, some of Carisma's competitors have ongoing clinical trials for product candidates that treat the same indications as Carisma's product candidates, and patients who would otherwise be eligible for Carisma's clinical trials may instead enroll in clinical trials of Carisma's competitors' product candidates. Carisma cannot predict how successful it will be at enrolling subjects in future clinical trials. Patient enrollment is affected by a variety of other factors, including:

- the prevalence and severity of the disease under investigation;
- the eligibility criteria for the trial in question;
- the perceived risks and benefits of the product candidate under trial;
- the requirements of the trial protocols;
- the availability of existing treatments for the indications for which Carisma is conducting clinical trials;
- the ability to recruit clinical trial investigators with the appropriate competencies and experience;
- the efforts to facilitate timely enrollment in clinical trials;
- the ability to identify specific patient populations based on specific genetic mutations or other factors;
- the patient referral practices of physicians;
- the ability to monitor patients adequately during and after treatment;
- Carisma's ability to obtain and maintain patient consents;
- the proximity and availability of clinical trial sites for prospective patients;

- the conduct of clinical trials by competitors for product candidates that treat the same indications or address the same patient populations as Carisma's product candidates;
- the cost to, or lack of adequate compensation for, prospective patients; and
- the impact of the ongoing COVID-19 pandemic.

Carisma's inability to locate and enroll a sufficient number of patients for its clinical trials would result in significant delays, could require it to abandon one or more clinical trials altogether and could delay or prevent its receipt of necessary marketing approvals. Enrollment delays in Carisma's clinical trials may result in increased development costs for its product candidates, which could cause the value of Carisma's business to decline and limit its ability to obtain additional financing.

If serious adverse events, undesirable side effects or unexpected characteristics are identified during the development of CT-0508 or any of Carisma's other product candidates, Carisma may need to abandon or limit its further clinical development of those product candidates.

Enrollment in group 1 of Carisma's first in human Phase 1 clinical trial of CT-0508 has been completed with nine patients successfully dosed and group 2 is currently open for enrollment with nine additional patients to be dosed in the trial. If CT-0508 or any other product candidate is associated with serious adverse events or undesirable side effects in clinical trials or have characteristics that are unexpected in clinical trials or pre-clinical testing, Carisma may need to abandon development of such product candidate or limit development to more narrow uses or subpopulations in which the serious adverse events, undesirable side effects or unexpected characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective. In pharmaceutical development, many compounds that initially show promise in early-stage or clinical testing are later found to cause side effects that delay or prevent further development of the compound. For example, while CT-0508 has been generally well tolerated based on preliminary clinical results from Carisma's Phase 1 clinical trial, such results may not be predictive or indicative of the successful development, marketing approval and eventual commercialization of CT-0508.

Additionally, if results of Carisma's clinical trials reveal undesirable side effects, Carisma, regulatory authorities or the IRBs at the institutions in which Carisma's studies are conducted could suspend or terminate its clinical trials, regulatory authorities could order Carisma to cease clinical trials or deny approval of its product candidates for any or all targeted indications or Carisma could be forced to materially modify the design of its clinical trials. Treatment-related side effects could also affect patient recruitment or the ability of enrolled patients to complete any of Carisma's clinical trials or result in potential liability claims. In addition, these side effects may not be appropriately recognized or managed by the treating medical staff.

If Carisma elects or is forced to suspend or terminate any clinical trial of its product candidates, the commercial prospects of such product candidate will be harmed, and Carisma's ability to generate revenues from sales of such product candidate will be delayed or eliminated. Any of these occurrences could materially harm Carisma's business.

If any of Carisma's product candidates receives marketing approval and Carisma, or others, later discover that the drug is less effective than previously believed or causes undesirable side effects that were not previously identified, Carisma's ability to market the drug could be compromised.

Carisma only recently initiated clinical development of its lead product candidate, CT-0508, and is in the pre-clinical testing stages for its other product candidates. Clinical trials will be conducted in carefully defined subsets of patients who have agreed to enter into clinical trials. Consequently, it is possible that Carisma's clinical trials may indicate an apparent positive effect of a product candidate that is greater than the actual positive effect, if any, or alternatively fail to identify undesirable side effects. If one or more of Carisma's product candidates receives marketing approval, and Carisma, or others, later discover that they are less effective than previously believed, or cause undesirable side effects, a number of potentially significant negative consequences could result, including:

- withdrawal or limitation by regulatory authorities of approvals of such product;
- seizure of the product by regulatory authorities;

- recall of the product;
- restrictions on the marketing of the product or the manufacturing process for any component thereof;
- requirement by regulatory authorities of additional warnings on the label;
- requirement that Carisma implement a risk evaluation and mitigation strategy or create a medication guide outlining the risks of such side effects for distribution to patients;
- commitment to expensive post-marketing studies as a prerequisite of approval by regulatory authorities of such product;
- the product may become less competitive;
- initiation of regulatory investigations and government enforcement actions;
- initiation of legal action against Carisma to hold it liable for harm caused to patients; and
- harm to Carisma's reputation and resulting harm to physician or patient acceptance of its products.

Any of these events could prevent Carisma from achieving or maintaining market acceptance of a particular product candidate, if approved, and could significantly harm Carisma's business, financial condition, and results of operations.

Carisma may expend its limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because Carisma has limited financial and managerial resources, it focuses on discovery programs and product candidates that it identifies for specific indications. As a result, Carisma may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential. Carisma's resource allocation decisions may cause it to fail to capitalize on viable commercial products or profitable market opportunities. Carisma's spending on current and future discovery and product development programs and product candidates for specific indications may not yield any commercially viable products. If Carisma does not accurately evaluate the commercial potential or target market for a particular product candidate, it may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for Carisma to retain sole development and commercialization rights to such product candidate. Failure to allocate resources or capitalize on strategies in a successful manner will have an adverse impact on Carisma's business.

Carisma may develop CT-0508 in combination with other drugs. If the FDA or similar regulatory authorities outside of the United States do not approve these other drugs, revoke their approval of such drugs, or if safety, efficacy, manufacturing or supply issues arise with the drugs Carisma chooses to evaluate in combination with CT-0508, Carisma may be unable to obtain approval of CT-0508 or market CT-0508.

In September 2022, Carisma submitted a clinical protocol amendment to the CT-0508 IND for a CAR-M / anti-PD-1 (CT-0508 and pembrolizumab) combination strategy.

Carisma did not develop or obtain marketing approval for, nor has Carisma manufactured or sold, any of the currently approved drugs that it may study in combination with CT-0508. If the FDA or similar regulatory authorities outside of the United States revoke their approval of any drug or drugs in combination with which Carisma determines to develop CT-0508, Carisma will not be able to market CT-0508 in combination with such revoked drugs.

If safety or efficacy issues arise with any of these drugs, Carisma could experience significant regulatory delays, and the FDA or similar regulatory authorities outside of the United States may require Carisma to redesign or terminate the applicable clinical trials. If the drugs Carisma uses are replaced as the standard of care for the indications it chooses for CT-0508, the FDA or similar regulatory authorities outside of the United States may require Carisma to conduct additional clinical trials. In addition, if manufacturing or other issues result in a shortage of supply of the drugs with which Carisma determines to combine with CT-0508, it may not be able to complete clinical development of CT-0508 on its current timeline or at all.

Even if CT-0508 were to receive marketing approval or be commercialized for use in combination with other existing drugs, Carisma would continue to be subject to the risks that the FDA or similar regulatory authorities outside of the United States could revoke approval of the drug used in combination with CT-0508 or that safety, efficacy, manufacturing or supply issues could arise with these existing drugs. Combination therapies are commonly used for the treatment of cancer, and Carisma would be subject to similar risks if it develops any of its other product candidates for use in combination with other drugs or for indications other than cancer. This could result in Carisma's own products being removed from the market or being less successful commercially.

Carisma may not be successful in its efforts to identify or discover additional potential product candidates.

A key element of Carisma's strategy is to apply its macrophage engineering platform to address a broad array of indications and targets to generate next-generation therapeutics, including three programs for indications outside of oncology. The discovery efforts that Carisma is conducting may not be successful in identifying product candidates that are useful in treating cancer or other diseases. Carisma's discovery engine may initially show promise in identifying potential product candidates, yet fail to yield product candidates for clinical development for a number of reasons, including:

- potential product candidates may, on further study, be shown to have harmful side effects or other characteristics that indicate that they are unlikely to be drugs that will receive marketing approval or achieve market acceptance; or
- potential product candidates may not be effective in treating their targeted diseases.

Discovery programs to identify new product candidates require substantial technical, financial and human resources. Carisma may choose to focus its efforts and resources on a potential product candidate that ultimately proves to be unsuccessful. If Carisma is unable to identify additional suitable product candidates for pre-clinical and clinical development, it will limit its potential to obtain revenues from sale of products in future periods, which likely would result in significant harm to Carisma's financial position and adversely impact its stock price.

Adverse public perception of genetic medicine, and gene therapy in particular, may negatively impact regulatory approval of, or demand for, Carisma's potential products.

The clinical and commercial success of Carisma's potential products will depend in part on public acceptance of the use of gene therapy for the prevention or treatment of human diseases. Public attitudes may be influenced by claims that gene therapy is unsafe, unethical, or immoral, and, consequently, Carisma's products may not gain the acceptance of the public or the medical community. Adverse public attitudes may adversely impact Carisma's ability to enroll clinical trials. Moreover, Carisma's success will depend upon physicians prescribing, and their patients being willing to receive, treatments that involve the use of product candidates that Carisma may develop in lieu of, or in addition to, existing treatments with which they are already familiar and for which greater clinical data may be available.

Risks Related to the Commercialization of Carisma's Product Candidates

Even if any of Carisma's product candidates receives marketing approval, it may fail to achieve the degree of market acceptance by physicians, patients, third-party payors and others in the medical community necessary for commercial success, and the market opportunity for any of its product candidates, if approved, may be smaller than it estimates.

If any of Carisma's product candidates receives marketing approval, it may nonetheless fail to gain sufficient market acceptance by physicians, patients, third-party payors and others in the medical community. For example, current cancer treatments, such as chemotherapy and radiation therapy, are well established in the medical community and doctors may continue to rely on these and similar treatments. Efforts to educate the medical community and third-party payors on the benefits of Carisma's product candidates may require significant resources and may not be successful. If Carisma's product candidates do not achieve an adequate level of acceptance, Carisma may not generate significant revenues from product sales and it may not become profitable. The degree of market acceptance of Carisma's product candidates, if approved for commercial sale, will depend on a number of factors, including:

- the efficacy and potential advantages of Carisma's product candidates compared to the advantages and relative risks of alternative treatments;
- the effectiveness of sales and marketing efforts;
- Carisma's ability to offer its products, if approved, for sale at competitive prices;
- the clinical indications for which the product is approved;
- the cost of treatment in relation to alternative treatments;
- the convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support;
- the timing of market introduction of competitive products;
- the availability of third-party coverage and adequate reimbursement, and patients' willingness to pay out of pocket for required co-payments or in the absence of third-party coverage or adequate reimbursement;
- product labeling or product insert requirements of the FDA, the European Medical Agency, or the EMA, or other regulatory authorities, including any limitations or warnings contained in a product's approved labeling;
- the prevalence and severity of any side effects;
- support from patient advocacy groups; and
- any restrictions on the use of Carisma's products, if approved, together with other medications.

Carisma's assessment of the potential market opportunity for its product candidates is based on industry and market data that it obtained from industry publications, research, surveys and studies conducted by third parties and Carisma's analysis of these data, research, surveys and studies. Industry publications and third-party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. While Carisma believes these industry publications and third-party research, surveys and studies are reliable, it has not independently verified such data. Carisma's estimates of the potential market opportunities for its product candidates include a number of key assumptions based on its industry knowledge, industry publications and third-party research, surveys and studies, which may be based on a small sample size and fail to accurately reflect market opportunities. While Carisma believes that its internal assumptions are reasonable, no independent source has verified such assumptions. If any of Carisma's assumptions or estimates, or these publications, research, surveys or studies prove to be inaccurate, then the actual market for any of its product candidates may be smaller than it expects, and as a result Carisma's revenues from product sales may be limited and it may be more difficult for Carisma to achieve or maintain profitability.

If Carisma is unable to establish sales, marketing and distribution capabilities or enter into sales, marketing and distribution agreements with third parties, it may not be successful in commercializing its product candidates if and when they are approved.

Carisma does not have a sales or marketing infrastructure and has no experience as a company in the sale, marketing or distribution of biopharmaceutical products. To achieve commercial success for any product for which Carisma may obtain marketing approval, it will need to establish a sales, marketing and distribution organization, either itself or through collaborations or other arrangements with third parties.

Carisma currently expects that it would build its own focused, specialized sales and marketing organization to support the commercialization in the United States of product candidates for which it receives marketing approval and that can be commercialized with such capabilities. There are risks involved with Carisma establishing its own sales, marketing and distribution capabilities. For example, recruiting and training a sales force is expensive and time-consuming and could delay any product launch. If the commercial launch of a product candidate for which Carisma recruit a sales force and establish marketing capabilities is delayed or does not occur for any reason, Carisma would have prematurely or unnecessarily incurred these commercialization expenses. These efforts may be costly, and Carisma's investment would be lost if it cannot retain or reposition its sales and marketing personnel. In general, the cost of establishing and maintaining a sales and marketing organization may exceed the cost-effectiveness of doing so.

Factors that may inhibit Carisma's efforts to commercialize its products on its own include:

- its inability to recruit, train and retain adequate numbers of effective sales, marketing, coverage or reimbursement, customer service, medical affairs and other support personnel;
- its inability to equip sales personnel with effective materials;
- its inability to effectively manage a geographically dispersed sales and marketing team;
- the inability of sales personnel to obtain access to physicians or persuade adequate numbers of physicians to prescribe any future products;
- the inability of reimbursement professionals to negotiate arrangements for formulary access, reimbursement and other acceptance by payors;
- the inability to price its products at a sufficient price point to ensure an adequate and attractive level of profitability;
- restricted or closed distribution channels that make it difficult to distribute its products to segments of the patient population;
- the lack of complementary products to be offered by sales personnel, which may put Carisma at a competitive disadvantage relative to companies with more extensive product lines; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

If Carisma is unable to establish its own sales, marketing and distribution capabilities and it enters into arrangements with third parties to perform these services, Carisma's revenues from product sales and its profitability, if any, are likely to be lower than if it were to market, sell and distribute any products that it develops itself. In addition, Carisma may not be successful in entering into arrangements with third parties to sell, market and distribute its product candidates or may be unable to do so on terms that are acceptable to Carisma. Carisma likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market its products effectively. If Carisma does not establish sales, marketing and distribution capabilities successfully, either on its own or in collaboration with third parties, it will not be successful in commercializing its product candidates.

Carisma faces substantial competition, which may result in others discovering, developing or commercializing products before or more successfully than it does, thus rendering Carisma's products non-competitive, obsolete or reducing the size of its market.

The biopharmaceutical industry, and in particular the cell therapy field, is characterized by intense investment and competition aimed at rapidly advancing new technologies. Carisma's platform and therapeutic product candidates are expected to face substantial competition from multiple technologies, marketed products and numerous other therapies being developed by third parties that use protein degradation, antibody therapy, inhibitory nucleic acid, gene editing or gene therapy development platforms and from companies focused on more traditional therapeutic modalities, such as small molecule inhibitors. The competition is likely to come from multiple sources, including biopharmaceutical companies, academic research institutions, governmental agencies and private research institutions that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization. The competition is likely to come from multiple sources, including major pharmaceutical, specialty pharmaceutical and biotechnology companies, academic institutions, government agencies and public and private research institutions.

Carisma is aware of a number of companies generally pursuing the development of myeloid cell therapies, including, among others Myeloid Therapeutics, Shoreline Biosciences, Inceptor Bio, Thunder Bio, Resolution Therapeutics, CellOrigin, Sirpant Therapeutics, and others. Carisma is also facing competition from companies pursuing autologous T-cell therapies, allogenic T-cell therapies, NK and other cell therapies, direct *in vivo* reprogrammed cell therapies and other macrophage-targeted oncology therapeutics.

Many of the companies against which Carisma is competing or against which it may compete in the future have significantly greater financial resources and expertise in research and development, manufacturing, pre-clinical testing, conducting clinical trials, obtaining marketing approvals and marketing approved products than Carisma does. These competitors also compete with Carisma in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, its development programs. Carisma's commercial opportunity could be reduced or eliminated if its competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that Carisma may develop. Carisma's competitors also may obtain FDA or other marketing approval for their products more rapidly than Carisma may obtain approval for its products, which could result in Carisma's competitors establishing a strong market position before Carisma is able to enter the market. In addition, Carisma's ability to compete may be affected in many cases by insurers or other third-party payors seeking to encourage the use of generic products. There are generic products currently on the market for certain of the indications that Carisma is pursuing, and additional products are expected to become available on a generic basis over the coming years. If Carisma's product candidates are approved, it expects that they will be priced at a significant premium over competitive generic products.

Technology in the biopharmaceutical industry has undergone rapid and significant change, and Carisma expects that it will continue to do so. Any products or processes that Carisma develops may become obsolete or uneconomical before it recovers any expenses incurred in connection with their development.

Mergers and acquisitions in the biopharmaceutical industry may result in even more resources being concentrated among a smaller number of Carisma's competitors. Smaller and other early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with Carisma in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, Carisma's programs.

Carisma has pursued and may in the future pursue the in-license or acquisition of rights to complementary technologies and product candidates on an opportunistic basis. However, Carisma may be unable to in-license or acquire any additional technologies or product candidates from third parties. The acquisition and licensing of technologies and product candidates is a competitive area, and a number of more established companies also have similar strategies to in-license or acquire technologies and product candidates that Carisma may consider attractive. These established companies may have a competitive advantage over Carisma due to their size, cash resources and greater development and commercialization capabilities. In addition, companies that perceive Carisma to be a competitor may be unwilling to assign or license rights to Carisma. Carisma also may be unable to in-license or acquire the relevant technology or product candidate on terms that would allow Carisma to make an appropriate return on its investment.

Even if Carisma is able to commercialize any product candidates, the products may become subject to unfavorable pricing regulations, third-party coverage or reimbursement practices or healthcare reform initiatives, which could harm its business.

The regulations that govern marketing approvals, pricing, coverage and reimbursement for new drug products vary widely from country to country. Current and future legislation may significantly change the approval requirements in ways that could involve additional costs and cause delays in obtaining approvals. Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. To obtain reimbursement or pricing approval in some countries, Carisma may be required to conduct a clinical trial that compares the cost effectiveness of its product candidate to other available therapies. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, Carisma might obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay its commercial launch of the product, possibly for lengthy time periods, and negatively impact the revenues, if any, Carisma is able to generate from the sale of the product in that country. Adverse pricing limitations may hinder Carisma's ability to recoup its investment in one or more product candidates, even if its product candidates obtain marketing approval.

Carisma's ability to commercialize any product candidates successfully also will depend in part on the extent to which coverage and adequate reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers and other organizations. The availability of coverage and adequacy of reimbursement by governmental healthcare programs such as Medicare and Medicaid, private health insurers and other third-party payors are essential for most patients to be able to afford medical services and pharmaceutical products, including Carisma's product candidates. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels. A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. Increasingly, government authorities and third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. Coverage and reimbursement may not be available for any product that Carisma commercializes and, even if these are available, the level of reimbursement may not be satisfactory. Reimbursement may affect the demand for, or the price of, any product candidate for which it obtains marketing approval. Obtaining and maintaining adequate reimbursement for Carisma's products may be difficult. Carisma may be required to conduct expensive pharmacoeconomic studies to justify coverage and reimbursement or the level of reimbursement relative to other therapies. If coverage and adequate reimbursement are not available or reimbursement is available only to limited levels, Carisma may not be able to successfully commercialize any product candidate for which it obtains marketing approval.

There may be significant delays in obtaining coverage and reimbursement for newly approved drugs, and coverage may be more limited than the purposes for which the drug is approved by the FDA or similar regulatory authorities outside of the United States. Moreover, eligibility for coverage and reimbursement does not imply that a drug will be paid for in all cases or at a rate that covers its costs, including research, development, intellectual property, manufacture, sale and distribution expenses. Interim reimbursement levels for new drugs, if applicable, may also not be sufficient to cover Carisma's costs and may not be made permanent. Reimbursement rates may vary according to the use of the drug and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost drugs and may be incorporated into existing payments for other services. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies. Carisma's inability to promptly obtain coverage and adequate reimbursement rates from both government-funded and private payors for any approved products that it develops could have a material adverse effect on its operating results, its ability to raise capital needed to commercialize products and its overall financial condition.

No uniform policy for coverage and reimbursement for products exists among third-party payors in the United States. Therefore, coverage and reimbursement for products can differ significantly from payor to payor. As a result, the coverage determination process is often a time-consuming and costly process that will require Carisma to provide scientific and clinical support for the use of its product candidates to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance. Furthermore, rules and regulations regarding reimbursement change frequently, in some cases on short notice, and Carisma believes that changes in these rules and regulations are likely.

There can be no assurance that Carisma's product candidates, even if they are approved for sale in the United States, in the European Union or in other countries, will be considered medically reasonable and necessary for a specific indication or cost-effective by third-party payors, or that coverage and an adequate level of reimbursement will be available or that third-party payors' reimbursement policies will not adversely affect Carisma's ability to sell its product candidates profitably.

Clinical trial and product liability lawsuits against Carisma could divert its resources and could cause Carisma to incur substantial liabilities and to limit commercialization of any products that it may develop.

Carisma faces an inherent risk of clinical trial and product liability exposure related to the testing of its product candidates in human clinical trials and will face an even greater risk if it commercially sells any products that it may develop. While Carisma currently has no products that have been approved for commercial sale, the ongoing, planned and future use of product candidates by Carisma in clinical trials, and the sale of any approved products in the future, may expose Carisma to liability claims. These claims might be made by patients that use the product, healthcare providers, pharmaceutical companies or others selling such products. On occasion, large judgments have been awarded in class action lawsuits based on products that had unanticipated adverse effects. If Carisma cannot successfully defend itself against claims that its product candidates or products caused injuries, it will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or products that it may develop;
- termination of clinical trials;
- withdrawal of marketing approval, recall, restriction on the approval or a “black box” warning or contraindication for an approved drug;
- withdrawal of clinical trial participants;
- significant costs to defend any related litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue;
- injury to Carisma’s reputation and significant negative media attention;
- reduced resources of Carisma management to pursue its business strategy;
- distraction of management’s attention from Carisma’s primary business; and
- the inability to commercialize any products that Carisma may develop.

Carisma currently holds $10.0 million in product liability insurance coverage in the aggregate, with a per incident limit of $10.0 million, which may not be adequate to cover all liabilities that it may incur. Carisma may need to increase its insurance coverage as it expands its clinical trials or if it commences commercialization of its product candidates. Insurance coverage is increasingly expensive. Carisma may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise. If a successful clinical trial or product liability claim or series of claims is brought against Carisma for uninsured liabilities or in excess of insured liabilities, its assets may not be sufficient to cover such claims and its business operations could be impaired.

Risks Related to Carisma’s Dependence on Third Parties

Carisma relies, and expects to continue to rely, on third parties to conduct its clinical trials, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials, which may prevent or delay Carisma’s ability to seek or obtain marketing approval for or commercialize its product candidates or otherwise harm its business. If Carisma is not able to maintain these third-party relationships or if these arrangements are terminated, it may have to alter its development and commercialization plans and its business could be adversely affected.

Carisma relies, and expects to continue to rely, on third-party clinical research organizations, in addition to other third parties such as research collaboratives, clinical data management organizations, medical institutions and clinical investigators, to conduct its ongoing Phase 1 clinical trial of CT-0508 and related combinations studies, its planned clinical trials of CT-0525, CT-1119 and CT-0729 and any other clinical trials it conducts. Carisma does not plan to independently conduct clinical trials of its product candidates or any other product candidates that it may develop. These contract research organizations and other third parties play a significant role in the conduct and timing of these trials and subsequent collection and analysis of data. These third-party arrangements might terminate for a variety of reasons, including a failure to perform by the third parties. If Carisma needs to enter into alternative arrangements, its product development activities might be delayed.

Carisma’s reliance on these third parties for discovery and product development activities reduces its control over these activities but does not relieve Carisma of its responsibilities. For example, Carisma will remain responsible for ensuring that each of its clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA requires Carisma to comply with standards, commonly referred to as good clinical practices, or GCPs, for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of trial participants are protected. Regulatory authorities in Europe and other jurisdictions have similar requirements. Regulatory authorities enforce these GCPs through periodic inspections of trial sponsors, principal investigators and trial sites. If Carisma or any of its contract research organizations or trial sites fail to comply with applicable GCPs, the clinical data generated in its clinical trials may be deemed unreliable, and the FDA or comparable foreign regulatory authorities may require Carisma to perform additional clinical trials before approving its marketing applications. Carisma is also required to register ongoing clinical trials and post the results of completed clinical trials on a government-sponsored database, ClinicalTrials.gov, within specified timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions.

If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct Carisma's clinical trials in accordance with regulatory requirements or Carisma's stated protocols, Carisma will not be able to obtain, or may be delayed in obtaining, marketing approvals for its product candidates and will not be able to, or may be delayed in its efforts to, successfully develop and commercialize its product candidates. Furthermore, these third parties may also have relationships with other entities, some of which may be Carisma's competitors. In addition, principal investigators for Carisma's clinical trials may serve as scientific advisors or consultants to Carisma from time to time and may receive cash or equity compensation in connection with such services. If these relationships and any related compensation result in perceived or actual conflicts of interest, or the FDA concludes that the financial relationship may have affected the interpretation of the trial, the integrity of the data generated at the applicable clinical trial site may be questioned, and the utility of the clinical trial itself may be jeopardized, which could result in the delay or rejection of any marketing application Carisma submits to the FDA. Any such delay or rejection could prevent Carisma from commercializing its product candidates.

If any of Carisma's relationships with these third parties terminate, it may not be able to enter into arrangements with alternative third parties or do so on commercially reasonable terms. Switching or adding additional contract research organizations, investigators and other third parties involves additional cost and requires management time and focus. In addition, there is a natural transition period when a new contract research organization commences work. As a result, delays can occur, which could materially impact Carisma's ability to meet its desired clinical development timelines. The COVID-19 pandemic and government measures taken in response have also had a significant impact on many contract research organizations. Although Carisma plans to carefully manage its relationships with its contract research organizations, investigators and other third parties, it may nonetheless encounter challenges or delays in the future, which could have a material and adverse impact on Carisma's business, financial condition and prospects.

Carisma relies on third-party contract manufacturing organizations for the manufacture of both drug substance and finished drug product of its product candidates for pre-clinical and clinical testing and expect to continue to do so for commercialization. This reliance on third parties increases the risk that Carisma will not have sufficient quantities of its product candidates or products or such quantities at an acceptable cost or quality, which could delay, prevent or impair Carisma's development or commercialization efforts.

Carisma does not own or operate, and currently has no plans to establish, any manufacturing facilities. Carisma relies, and expects to continue to rely, on third-party contract manufacturing organizations for both drug substance and finished drug product, as well as for commercial manufacture if any of its product candidates receive marketing approval. Carisma also currently relies on these third parties for the manufacture of plasmid and viral vectors, patient leukapheresis material logistics, as well as packaging, labeling, sterilization, storage, distribution and other production logistics. This reliance on third parties increases the risk that Carisma will not have sufficient quantities of its product candidates or products or such quantities at an acceptable cost or quality, which could delay, prevent or impair Carisma's development or commercialization efforts. Carisma may be unable to establish any agreements with third-party manufacturers or to do so on acceptable terms. Even if Carisma is able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including:

- reliance on the third party for regulatory compliance and quality assurance;
- the possible breach of the manufacturing agreement by the third party;
- the potential failure to manufacture Carisma's product candidate or product according to its specifications;
- the potential failure to manufacture Carisma's product candidate or product according to its schedule or at all;
- the possible misappropriation of Carisma's proprietary information, including its trade secrets and know-how; and
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for Carisma.

Carisma or its third-party manufacturers may encounter shortages in the raw materials or active pharmaceutical ingredients necessary to produce Carisma's product candidates in the quantities needed for its clinical trials or, if its product candidates are approved, in sufficient quantities for commercialization or to meet an increase in demand, as a result of capacity constraints or delays or disruptions in the market for the raw materials or active pharmaceutical ingredients, including shortages caused by the purchase of such raw materials or active pharmaceutical ingredients by its competitors or others. The failure of Carisma or its third-party manufacturers to obtain the raw materials or active pharmaceutical ingredients necessary to manufacture sufficient quantities of its product candidates, may have a material adverse effect on Carisma's business.

Carisma's third-party manufacturers are subject to inspection and approval by regulatory authorities before Carisma can commence the manufacture and sale of any of its product candidates, and thereafter subject to ongoing inspection from time to time. Third-party manufacturers may not be able to comply with current good manufacturing practices, or cGMP, regulations or similar regulatory requirements outside of the United States. Carisma's failure, or the failure of its third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on Carisma, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or products, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of Carisma's products.

Carisma's product candidates and any products that it may develop may compete with other product candidates and products for access to manufacturing facilities. As a result, Carisma may not obtain access to these facilities on a priority basis or at all. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for Carisma. Any performance failure on the part of Carisma's existing or future manufacturers could delay clinical development or marketing approval. Carisma does not currently have arrangements in place for redundant supply or a second source for bulk drug substance. If any of Carisma's current contract manufacturers cannot perform as agreed, it may be required to replace such manufacturers. Although Carisma believes that there are several potential alternative manufacturers who could manufacture its product candidates, it may incur added costs and delays in identifying and qualifying any such replacement or be unable to reach agreement with an alternative manufacturer. In addition, the COVID-19 pandemic may impact Carisma's ability to procure sufficient supplies for the development of its product candidates. The extent of this impact will depend on the severity and duration of the spread of the virus, and the actions undertaken to contain COVID-19 or treat its effects.

Carisma's current and anticipated future dependence upon others for the manufacture of its product candidates or products may adversely affect its future profit margins and its ability to commercialize any products that receive marketing approval on a timely and competitive basis.

Carisma expects to depend on collaborations with third parties for the research, development and commercialization of certain of its product candidates. If Carisma's collaborations are not successful, it may not be able to capitalize on the market potential of these product candidates and its business could be adversely affected.

Carisma anticipates seeking third-party collaborators for the research, development and commercialization of certain of its product candidates. For example, Carisma entered into a strategic collaboration with Moderna in January 2022 focused on the development of *in vivo* CAR-M therapeutics for up to twelve product candidates. In collaboration with Moderna, Carisma has established a myeloid tropic LNP/mRNA *in vivo* CAR-M platform for oncology targets, which enables an off-the-shelf approach wherein the patient's own myeloid cells are engineered directly within their body via the administration of a myeloid-tropic LNP encapsulating macrophage reprogramming mRNA CAR constructs, removing the requirement for *ex vivo* cell manufacturing entirely. As part of the collaboration, Carisma received a $45.0 million up-front cash payment from Moderna, in addition to future research funding, milestone payments and royalties. Concurrent with entering into the collaboration agreement, Moderna made an investment in Carisma in the form of a $35.0 million convertible note.

Carisma's likely collaborators for any other collaboration arrangements include large and mid-size pharmaceutical companies and biotechnology companies.

Any such arrangements with third parties will likely limit Carisma's control over the amount and timing of resources that its collaborators dedicate to the development or commercialization of its product candidates Carisma may seek to develop with them. Carisma's ability to generate revenues from these arrangements will depend on its collaborators' abilities and efforts to successfully perform the functions assigned to them in these arrangements. Carisma cannot predict the success of any collaboration that it enters into.

Collaborations involving Carisma's discovery programs or any product candidates it may develop, including its collaboration with Moderna, pose the following risks to Carisma:

- collaborators have significant discretion in determining the amount and timing of efforts and resources that they will apply to these collaborations; for example, Carisma's collaboration with Moderna is managed by a joint steering committee, which is comprised of representatives from Carisma and Moderna, with Moderna having final decision-making authority, subject to specified limitations;
- collaborators may not perform their obligations as expected;
- collaborators may not pursue development of Carisma's product candidates or may elect not to continue or renew development programs based on results of clinical trials or other studies, changes in the collaborators' strategic focus or available funding, or external factors, such as an acquisition or business combination, that divert resources or create competing priorities;
- collaborators may not pursue development and commercialization of any product candidates that achieve marketing approval or may elect not to continue or renew commercialization programs based on results of clinical trials or other studies, changes in the collaborators' strategic focus or available funding, or external factors, such as an acquisition or business combination, that may divert resources or create competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- Carisma may not have access to, or may be restricted from disclosing, certain information regarding product candidates being developed or commercialized under a collaboration and, consequently, may have limited ability to inform its stockholders about the status of such product candidates on a discretionary basis; for example, data, results and know-how generated in the performance of the Moderna collaboration is deemed the confidential information of Moderna, which Carisma may not disclose except under limited circumstances;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with Carisma's product candidates and products if the collaborators believe that the competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than Carisma's;
- product candidates discovered in collaboration with Carisma may be viewed by Carisma's collaborators as competitive with their own product candidates or products, which may cause collaborators to cease to devote resources to the commercialization of Carisma's product candidates;
- a collaborator may fail to comply with applicable regulatory requirements regarding the development, manufacture, distribution or marketing of a product candidate or product;
- a collaborator may seek to renegotiate or terminate their relationship with Carisma due to unsatisfactory clinical results, manufacturing issues, a change in business strategy, a change of control or other reasons;
- a collaborator with marketing and distribution rights to one or more of Carisma's product candidates that achieve marketing approval may not commit sufficient resources to the marketing and distribution of such product or products;
- disagreements with collaborators, including disagreements over intellectual property or proprietary rights, contract interpretation or the preferred course of development, might cause delays or terminations of the research, development or commercialization of product candidates, might lead to additional responsibilities for Carisma with respect to product candidates, or might result in litigation or arbitration, any of which would be time-consuming and expensive;
- Carisma may lose certain valuable rights under circumstances identified in its collaborations, including if it undergoes a change of control;
- collaborators may not properly obtain, maintain, enforce, defend or protect Carisma's intellectual property or proprietary rights or may use its proprietary information in such a way as to potentially lead to disputes or legal proceedings that could jeopardize or invalidate its intellectual property or proprietary information or expose Carisma to potential litigation; for example, Moderna has the first right to prosecute, enforce or defend certain patent rights under its agreement with Carisma, and although Carisma may have the right to assume the prosecution, enforcement or defense of such patent rights if Moderna does not, Carisma's ability to do so may be compromised by Moderna's actions;

- disputes may arise with respect to the ownership of intellectual property developed pursuant to Carisma's collaborations;
- collaborators may infringe, misappropriate or otherwise violate the intellectual property or proprietary rights of third parties, which may expose Carisma to litigation and potential liability;
- collaborations may be terminated, and, if terminated, Carisma could be required to raise additional capital to pursue further development or commercialization of the applicable product candidates; for example, Moderna has the right to terminate its agreement with Carisma for convenience in its entirety or with respect to a specific product or target on ninety days' prior notice, in connection with a material breach of the agreement by Carisma that remains uncured for a specified period of time or in the event of specified insolvency events involving Carisma; and
- collaboration agreements may not lead to development or commercialization of product candidates in the most efficient manner, or at all. If a present or future collaborator of Carisma's were to be involved in a business combination, the continued pursuit and emphasis on its product development or commercialization program under such collaboration could be delayed, diminished or terminated.

If any collaborations that Carisma enters into do not result in the successful development and commercialization of products or if one of Carisma's collaborators terminates its agreement with it, Carisma may not receive any future research funding or milestone or royalty payments under the collaboration. If Carisma does not receive the funding it expects under these agreements, its development of its product candidates could be delayed and it may need additional resources to develop its product candidates. All of the risks relating to product development, marketing approval and commercialization described herein also apply to the activities of Carisma's collaborators.

Carisma may in the future decide to collaborate with biopharmaceutical companies for the development and potential commercialization of any product candidates it may develop. These relationships, or those like them, may require Carisma to incur non-recurring and other charges, increase Carisma's near- and long-term expenditures, issue securities that dilute Carisma's existing stockholders, or disrupt Carisma's management and business. In addition, Carisma could face significant competition in seeking appropriate collaborators, and the negotiation process is time-consuming and complex. Carisma's ability to reach a definitive collaboration agreement will depend, among other things, upon its assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration, and the proposed collaborator's evaluation of several factors. If Carisma licenses rights to any product candidates it or its collaborators may develop, Carisma may not be able to realize the benefit of such transactions if it is unable to successfully integrate them with its existing operations and company culture.

Carisma may seek to establish additional collaborations. If Carisma is not able to establish or maintain additional collaborations, on commercially reasonable terms, it may have to alter its development and commercialization plans and its business could be adversely affected.

To realize the full potential of Carisma's macrophage engineering platform and accelerate the development of additional macrophage engineering programs, Carisma plans to continue to selectively pursue collaborations with leading biopharmaceutical companies with particular experience, including development and commercial expertise and capabilities. Carisma faces significant competition in attracting appropriate collaborators, and a number of more established companies may also be pursuing strategies to license or acquire third-party intellectual property rights that it considers attractive. These established companies may have a competitive advantage over Carisma due to their size, financial resources and greater clinical development and commercialization capabilities. In addition, companies that perceive Carisma to be a competitor may be unwilling to assign or license rights to Carisma. Whether Carisma reaches a definitive agreement for a collaboration will depend, among other things, upon its assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of a number of factors. Those factors may include the design or results of clinical trials, the likelihood of approval by the FDA or other regulatory authorities, the potential market for the subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the potential of competing products, the existence of uncertainty with respect to Carisma's ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge, the terms of any existing collaboration agreements, and industry and market conditions generally. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with Carisma for its product candidate. Carisma may also be restricted under future license agreements from entering into agreements on certain terms with potential collaborators. Collaborations are complex and time-consuming to negotiate, document and execute. In addition, there have been a significant number of recent business combinations among large biopharmaceutical companies that have resulted in a reduced number of potential future collaborators. Any collaboration Carisma may enter into may limit its ability to enter into future agreements on particular terms or covering similar target indications with other potential collaborators.

If Carisma is unable to reach agreements with suitable collaborators on a timely basis, on acceptable terms or at all, it may have to curtail the development of a product candidate, reduce or delay its development program or one or more of Carisma's other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase its expenditures and undertake development or commercialization activities at its own expense. If Carisma elects to fund and undertake development or commercialization activities on its own, it may need to obtain additional expertise and additional capital, which may not be available to Carisma on acceptable terms or at all. If Carisma fails to enter into collaborations and does not have sufficient funds or expertise to undertake the necessary development and commercialization activities, it may not be able to further develop its product candidates or bring them to market and generate revenue from product sales, which could have an adverse effect on its business, prospects, financial condition and results of operations.

Carisma has a number of academic collaborations to supplement its internal discovery and product development program. If any such collaborator decides to discontinue or devote less resources to such research, Carisma's discovery programs could be diminished.

Carisma's discovery engine is supplemented by academic collaborations to expand its platform, which Carisma relies upon to advance its development and commercialization plans for its product candidates. In August 2020, Carisma entered into a scientific research and licensing agreement with Nathaniel R. Landau, Ph.D. and NYU Langone Health through which it obtained exclusive rights to develop their Vpx lentiviral vector globally for all indications. Carisma also has an ongoing discovery program in neurodegeneration being pursued through a sponsored research agreement with Dr. Saar Gill, Associate Professor of Medicine at the University of Pennsylvania and co-founder of Carisma, to develop CAR macrophages and microglia targeted against protein aggregates associated with neurodegenerative disease pathology. In addition, Carisma from time to time may enter into academic research collaborations to explore the development of new technologies and indications.

While these academic institutions have contractual obligations to Carisma, they are independent entities and are not under Carisma's control or the control of Carisma's officers or directors. Carisma's research and licensing agreements with academic collaborators generally provide academic collaborators with license maintenance fees, development and regulatory milestone payments, royalties on net sales of products and a portion of sublicense income that Carisma receives. Upon the scheduled expiration of any academic collaboration, Carisma may not be able to renew the related agreement or any renewal could be on terms less favorable to Carisma than those contained in the existing agreement. Furthermore, either Carisma or the academic institution generally may terminate the sponsored research agreement for convenience following a specified notice period. If any of these academic institutions decides to not renew or to terminate the related agreement or decides to devote fewer resources to such activities, Carisma's discovery efforts would be diminished, while its royalty obligations, if any, would continue unmodified.

Any acquisitions or in-license transactions that Carisma completes could disrupt its business, cause dilution to its stockholders or reduce its financial resources.

Carisma has licensed three patent families from the University of Pennsylvania and one patent family from New York University and may enter into transactions to in-license or acquire other businesses, intellectual property, technologies, product candidates or products. If Carisma determines to pursue a particular transaction, it may not be able to complete the transaction on favorable terms, or at all. Any in-licenses or acquisitions Carisma completes may not strengthen its competitive position, and these transactions may be viewed negatively by customers or investors. Carisma may decide to incur debt in connection with an in-license or acquisition or issue its common stock or other equity securities to the stockholders of the target company, which would reduce the percentage ownership of its existing stockholders. Carisma could incur losses resulting from undiscovered liabilities that are not covered by the indemnification it may obtain from the seller. In addition, Carisma may not be able to successfully integrate the acquired personnel, technologies and operations into its existing business in an effective, timely and nondisruptive manner. In-license and acquisition transactions may also divert management attention from day-to-day responsibilities, increase its expenses and reduce its cash available for operations and other uses. Carisma cannot predict the number, timing or size of additional future in-licenses or acquisitions or the effect that any such transactions might have on its operating results.

The FDA, European Medicines Agency, or EMA, or other comparable foreign regulatory authorities could require the clearance or approval of a companion diagnostic device as a condition of approval for any product candidate that requires or would commercially benefit from such tests. Failure to successfully validate, develop and obtain regulatory clearance or approval for companion diagnostics on a timely basis or at all could harm Carisma's product development strategy and Carisma may not realize the commercial potential of any such product candidate.

If safe and effective use of any of Carisma's other product candidates depends on an in vitro diagnostic, then the FDA generally will require approval or clearance of that diagnostic, known as a companion diagnostic, at the same time that the FDA approves Carisma's product candidates. The process of obtaining or creating such diagnostic is time consuming and costly. Companion diagnostics, which provide information that is essential for the safe and effective use of a corresponding therapeutic product, are subject to regulation by the FDA, EMA and other comparable foreign regulatory authorities as medical devices and require separate regulatory approval from therapeutic approval prior to commercialization. The FDA previously has required in vitro companion diagnostics intended to select the patients who will respond to a product candidate to obtain pre-market approval, or PMA, simultaneously with approval of the therapeutic candidate. The PMA process, including the gathering of preclinical and clinical data and the submission and review by the FDA, can take several years or longer. It involves a rigorous pre-market review during which the sponsor must prepare and provide the FDA with reasonable assurance of the device's safety and effectiveness and information about the device and its components regarding, among other things, device design, manufacturing, and labeling. After a device is placed on the market, it remains subject to significant regulatory requirements, including requirements governing development, testing, manufacturing, distribution, marketing, promotion, labeling, import, export, record-keeping, and adverse event reporting.

Given Carisma's limited experience in developing and commercializing diagnostics, Carisma does not plan to develop companion diagnostics internally and thus will be dependent on the sustained cooperation and effort of third-party collaborators in developing and obtaining approval for these companion diagnostics. Carisma may not be able to enter into arrangements with a provider to develop a companion diagnostic for use in connection with a registrational trial for Carisma's product candidates or for commercialization of Carisma's product candidates, or do so on commercially reasonable terms, which could adversely affect and/or delay the development or commercialization of Carisma's product candidates. Carisma and its future collaborators may encounter difficulties in developing and obtaining approval for the companion diagnostics, including issues relating to selectivity/specificity, analytical validation, reproducibility, or clinical validation. Any delay or failure by Carisma's collaborators to develop or obtain regulatory approval of the companion diagnostics could delay or prevent approval of Carisma's product candidates. In addition, Carisma, its collaborators or third parties may encounter production difficulties that could constrain the supply of the companion diagnostics, and both they and Carisma may have difficulties gaining acceptance of the use of the companion diagnostics by physicians.

Any companion diagnostic collaborator or third party with whom Carisma contracts may decide not to commercialize or to discontinue selling or manufacturing the companion diagnostic that Carisma anticipates using in connection with development and commercialization of its product candidates, or Carisma's relationship with such collaborator or third party may otherwise terminate. Carisma may not be able to enter into arrangements with another provider to obtain supplies of an alternative diagnostic test for use in connection with the development and commercialization of its product candidates or do so on commercially reasonable terms, which could adversely affect and/or delay the development or commercialization of its product candidates.

Risks Related to Carisma's Intellectual Property

If Carisma is unable to obtain, maintain and enforce patent protection for its technology and product candidates or if the scope of the patent protection obtained is not sufficiently broad, its competitors could develop and commercialize technology and products similar or identical to Carisma's, and its ability to successfully develop and commercialize its technology and product candidates may be adversely affected and Carisma may not be able to compete effectively in its market.

Carisma's commercial success depends in part on its ability to obtain, maintain and enforce protection of the intellectual property it may own solely and jointly with others or may license from others, particularly patents, in the United States and other countries with respect to any proprietary technology and product candidates. Carisma seeks to protect its proprietary position by filing patent applications in the United States and abroad related to its technologies and product candidates that are important to its business and by in-licensing intellectual property related to such technologies and product candidates. If Carisma is unable to obtain, maintain or enforce patent protection with respect to any proprietary technology or product candidate, its business, financial condition, results of operations and prospects could be materially harmed. Any disclosure to or misappropriation by third parties of Carisma's confidential proprietary information could enable competitors to quickly duplicate or surpass Carisma's technological achievements, thus eroding Carisma's competitive position in its market. Moreover, the patent applications Carisma owns, co-owns or licenses may fail to result in issued patents in the United States or in other foreign countries.

The patent prosecution process is expensive, time-consuming and complex, and Carisma may not be able to file, prosecute, maintain, defend or license all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that Carisma will fail to identify patentable aspects of its research and development output before it is too late to obtain patent protection. Moreover, in some circumstances, Carisma does not have the right to control the preparation, filing and prosecution of patent applications, or to maintain, enforce and defend the patents, covering technology that Carisma licenses from third parties. Therefore, these in-licensed patents and applications may not be prepared, filed, prosecuted, maintained, defended and enforced in a manner consistent with the best interests of its business.

The patent position of biopharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. In addition, the scope of patent protection outside of the United States is uncertain and laws of foreign countries may not protect Carisma's rights to the same extent as the laws of the United States or vice versa. For example, European patent law restricts the patentability of methods of treatment of the human body more than United States law does. With respect to both owned and in-licensed patent rights, Carisma cannot predict whether the patent applications Carisma and its licensors are currently pursuing will issue as patents in any particular jurisdiction or whether the claims of any issued patents will provide sufficient protection from competitors. Further, Carisma may not be aware of all third-party intellectual property rights potentially relating to its product candidates. In addition, publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not published at all. Therefore, neither Carisma nor its licensors can know with certainty whether either Carisma or its licensors were the first to make the inventions claimed in the patents and patent applications Carisma owns or in-licenses now or in the future, or that either Carisma or its licensors were the first to file for patent protection of such inventions. As a result, the issuance, scope, validity, enforceability and commercial value of its patent rights are highly uncertain. Moreover, its owned or in-licensed pending and future patent applications may not result in patents being issued which protects its technology and product candidates, in whole or in part, or which effectively prevent others from commercializing competitive technologies and products. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of its patents and its ability to obtain, protect, maintain, defend and enforce its patent rights, narrow the scope of its patent protection and, more generally, could affect the value or narrow the scope of its patent rights.

Moreover, Carisma or its licensors may be subject to a third-party preissuance submission of prior art to the U.S. Patent and Trademark Office, or the USPTO, or become involved in opposition, derivation, revocation, reexamination, *inter partes* review, post-grant review or interference proceedings challenging its patent rights or the patent rights of others. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, its patent rights, allow third parties to commercialize its technology or product candidates and compete directly with it, without payment to it, or result in its inability to manufacture or commercialize products without infringing third-party patent rights. If the breadth or strength of protection provided by its patents and patent applications is threatened, regardless of the outcome, it could dissuade companies from collaborating with it to license, develop or commercialize current or future product candidates.

Carisma's owned or licensed patent estate includes patent applications, many of which are at an early stage of prosecution. The coverage claimed in a patent application can be significantly reduced before the patent is issued, and its scope can be reinterpreted after issuance. Even if its owned or in-licensed patent applications issue as patents, they may not issue in a form that will provide it with any meaningful protection, prevent competitors from competing with it or otherwise provide it with any competitive advantage. The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and its owned and in-licensed patents may be challenged in the courts or patent offices in the United States and abroad. Such challenges may result in loss of exclusivity or freedom to operate or in patent claims being narrowed, invalidated or held unenforceable, in whole or in part, which could limit its ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of its technology and product candidates. Such proceedings also may result in substantial cost and require significant time from its management and employees, even if the eventual outcome is favorable to Carisma. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. Furthermore, its competitors may be able to circumvent its owned or in-licensed patents by developing similar or alternative technologies or products in a non-infringing manner. As a result, its patent portfolio may not provide it with sufficient rights to exclude others from commercializing technology and products similar or identical to any of its technology and product candidates.

Patent terms may be inadequate to protect Carisma's competitive position with respect to its current or future product candidates for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions may be available, but there is no assurance that any such extensions will be obtained, and the life of a patent, and the protection it affords, is limited. Even if patents covering Carisma's current or future product candidates are obtained, once the patent life has expired, it may be open to competition from competitive products, including generics or biosimilars. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, its patent portfolio may not provide it with sufficient rights to exclude others from commercializing products similar or identical to Carisma's.

In the United States, patent term can also be adjusted due to delays that occur during examination of patent applications, which may extend the term of a patent beyond 20 years. There is a risk that Carisma may take action that detracts from any accrued patent term adjustment.

It is necessary to pay certain maintenance fees, also referred to as annuities or renewal fees in some countries, throughout the lifetime of a patent at regular intervals. Failure to pay these fees can cause a granted patent to prematurely expire, without an opportunity for revival. There is a risk that Carisma may be unable to maintain patent protection for certain patents in all markets due to finite availability of resources.

If Carisma is unable to obtain licenses from third parties on commercially reasonable terms or fail to comply with its obligations under such agreements, its business could be harmed.

It may be necessary for it to use the patented or proprietary technology of third parties to commercialize its products, in which case Carisma would be required to obtain a license from these third parties. If Carisma is unable to license such technology, or if Carisma is forced to license such technology on unfavorable terms, its business could be materially harmed. If Carisma is unable to obtain a necessary license, Carisma may be unable to develop or commercialize the affected product candidate(s), which could materially harm its business and the third parties owning such intellectual property rights could seek either an injunction prohibiting its sales or an obligation on its part to pay royalties and/or other forms of compensation. Even if Carisma is able to obtain a license, it may be non-exclusive, thereby giving its competitors access to the same technologies licensed to it.

If Carisma is unable to obtain rights to required third-party intellectual property rights or maintain the existing intellectual property rights Carisma has, Carisma may be required to expend significant time and resources to redesign its technology, product candidates, or the methods for manufacturing them or to develop or license replacement technology, all of which may not be feasible on a technical or commercial basis. If Carisma is unable to do so, Carisma may be unable to develop or commercialize the affected technology and product candidates, which could harm its business, financial condition, results of operations and prospects significantly.

Additionally, if Carisma fails to comply with its obligations under any license agreements, its counterparties may have the right to terminate these agreements, in which event Carisma might not be able to develop, manufacture or market, or may be forced to cease developing, manufacturing or marketing, any product that is covered by these agreements or may face other penalties under such agreements. Such an occurrence could materially adversely affect the value of the product candidate being developed under any such agreement. Termination of these agreements or reduction or elimination of its rights under these agreements, or restrictions on its ability to freely assign or sublicense its rights under such agreements when it is in the interest of its business to do so, may result in it having to negotiate new or restated agreements with less favorable terms, cause it to lose its rights under these agreements, including its rights to important intellectual property or technology or impede, or delay or prohibit the further development or commercialization of one or more product candidates that rely on such agreements.

If Carisma does not obtain patent term extension for any product candidates it may develop, its business may be materially harmed.

In the United States, the term of a patent that covers an FDA-approved drug may, in certain cases, be eligible for a patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, or the Hatch-Waxman Act, as compensation for the loss of a patent term during the FDA regulatory review process for a drug product subject to the provisions of the Hatch-Waxman Act. The Hatch-Waxman Act permits a patent term extension of up to five years, but patent extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval. Only one patent among those eligible for an extension and only those claims covering the approved drug, a method for using it, or a method for manufacturing it may be extended. Similar provisions are available in Europe and certain other non-United States jurisdictions to extend the term of a patent that covers an approved drug. While, in the future, if and when its product candidates receive FDA approval, Carisma expects to apply for patent term extensions on patents covering those product candidates, there is no guarantee that the applicable authorities, including the FDA, will agree with its assessment of whether such extensions should be granted, and even if granted, the length of such extensions. Carisma may not be granted patent term extension either in the United States or in any foreign country because of, for example, failing to exercise due diligence during the testing phase or regulatory review process, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents or otherwise failing to satisfy applicable requirements. Moreover, the term of extension, as well as the scope of patent protection during any such extension, afforded by the governmental authority could be less than requests. If Carisma is unable to obtain any patent term extension or the term of any such extension is less than it requests, its competitors may obtain approval of competing products following the expiration of its patent rights, and its business, financial condition, results of operations and prospects could be materially harmed.

Changes to patent laws in the United States and other jurisdictions could diminish the value of patents in general, thereby impairing its ability to protect its products.

Changes in either the patent laws or interpretation of patent laws in the United States, including patent reform legislation such as the Leahy-Smith America Invents Act, or the Leahy-Smith Act, could increase the uncertainties and costs surrounding the prosecution of its owned or in-licensed patent applications and the maintenance, enforcement or defense of its owned or in-licensed issued patents.

In addition, the patent positions of companies in the development and commercialization of pharmaceuticals are particularly uncertain. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and wakened the rights of patent owners in certain situations. This combination of events has created uncertainty with respect to the validity and enforceability of patents once obtained. Depending on future actions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that could have a material adverse effect on Carisma's patent rights and its ability to protect, defend and enforce its patent rights in the future. Similarly, changes in patent law and regulations in other countries or jurisdictions, changes in the governmental bodies that enforce them or changes in how the relevant governmental authority enforces patent laws or regulations may weaken Carisma's ability to obtain new patents or to enforce patents that Carisma owns or has licensed or that Carisma may obtain in the future.

The federal government retains certain rights in inventions created using its financial assistance under the Bayh-Dole Act. The federal government retains a "nonexclusive, nontransferable, irrevocable, paid-up license" for its own benefit. The Bayh-Dole Act also provides federal agencies with "march-in rights". March-in rights allow the government, in specified circumstances, to require the contractor or successors in title to the patent to grant a "nonexclusive, partially exclusive, or exclusive license" to a "responsible applicant or applicants." If the patent owner refuses to do so, the government may grant the license itself. Carisma collaborates with a number of universities with respect to certain of its research and development. Carisma cannot be sure that any co-developed intellectual property will be free from government rights pursuant to the Bayh-Dole Act. If, in the future, Carisma co-owns or in-licenses technology which is critical to its business that is developed in whole or in part with federal funds subject to the Bayh-Dole Act, its ability to enforce or otherwise exploit patents covering such technology may be adversely affected.

Although Carisma or its licensors are not currently involved in any litigation, Carisma may become involved in lawsuits to protect or enforce its patent, the patents of its licensors or other intellectual property rights, which could be expensive, time-consuming and unsuccessful.

Competitors and other third parties may infringe, misappropriate or otherwise violate Carisma's or its licensor's issued patents, the patents of its licensors or other intellectual property. It may be difficult to detect infringers who do not advertise the components that are used in their products. Moreover, it may be difficult or impossible to obtain evidence of infringement in a competitor's product. To counter infringement or misappropriation, Carisma or its licensors may need to file infringement, misappropriation or other intellectual property related claims, which can be expensive and time-consuming and can distract its management and scientific personnel. There can be no assurance that Carisma will have sufficient financial or other resources to file and pursue such infringement claims, which typically last for years before they are concluded. Any claims Carisma asserts against perceived infringers could provoke such parties to assert counterclaims against it, alleging that it infringes, misappropriates or otherwise violates their intellectual property.

In addition, in a patent infringement proceeding, such parties could counterclaim that the patents Carisma or its licensors have asserted are invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including novelty, non-obviousness, enablement, or written description. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. Third parties may institute such claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, post-grant review, *inter partes* review, interference proceedings, derivation proceedings, and equivalent proceedings in foreign jurisdictions, such as opposition proceedings. The outcome following legal assertions of invalidity and unenforceability is unpredictable. Similarly, if Carisma or its licensors assert trademark infringement claims, a court may determine that the marks Carisma or its licensors have asserted are invalid or unenforceable, or that the party against whom Carisma or its licensors have asserted trademark infringement has superior rights to the marks in question. In this case, Carisma could ultimately be forced to cease use of such trademarks, which could materially harm its business and negatively affect its position in the marketplace.

An adverse result in any such proceeding could put one or more of its owned or in-licensed patents at risk of being invalidated, held unenforceable or interpreted narrowly, could put any of its owned or in-licensed patent applications at risk of not yielding an issued patent, and could limit its or its licensor's ability to assert those patents against those parties, or other competitors, and curtail or preclude its ability to exclude third parties from developing and commercializing similar or competitive products. A court may also refuse to stop the third party from using the technology at issue in a proceeding on the grounds that its owned or in-licensed patents do not cover such technology. Even if Carisma establishes infringement, a court may not order the third party to stop using the technology at issue and instead award only monetary damages to Carisma, which may not be an adequate remedy. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of its confidential information or trade secrets could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions, or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of its common stock. Any of the foregoing could allow such third parties to develop and commercialize competing technologies and products and have a material adverse impact on its business, financial condition, results of operations and prospects.

Interference or derivation proceedings provoked by third parties or brought by Carisma or declared by the USPTO may be necessary to determine the priority of inventions with respect to its patents or patent applications. An unfavorable outcome could require it to cease using the related technology or to attempt to license rights to it from the prevailing party. Carisma's business could be harmed if the prevailing party does not offer it a license on commercially reasonable terms or at all, or if a non-exclusive license is offered and its competitors gain access to the same technology. Its defense of litigation or interference or derivation proceedings may fail and, even if successful, may result in substantial costs and distract its management, technical personnel and other employees. In addition, the uncertainties associated with litigation could have a material adverse effect on its ability to raise the funds necessary to continue its clinical trials, continue its research programs, license necessary technology from third parties, or enter into development partnerships that would help it bring its product candidates to market.

Any such litigation or proceedings could substantially increase Carisma's operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities.

Carisma may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of Carisma's competitors may be able to sustain the costs of such litigation or proceedings more effectively than Carisma can because of their greater financial resources in one or more aspects, or for other reasons. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could compromise Carisma's ability to compete in the marketplace.

Carisma may need to license intellectual property from third parties, and such licenses may not be available or may not be available on commercially reasonable terms.

A third party may hold intellectual property, including patent rights, that are important or necessary to the development of Carisma's products. It may be necessary for it to use the patented or proprietary technology of a third party to commercialize its own technology or products, in which case it would be required to obtain a license from such third party. A license to such intellectual property may not be available or may not be available on commercially reasonable terms, which could have a material adverse effect on Carisma's business and financial condition.

The licensing and acquisition of third-party intellectual property rights is a competitive practice, and companies that may be more established, or have greater resources than Carisma, may also be pursuing strategies to license or acquire third-party intellectual property rights that it may consider necessary or attractive in order to commercialize its product candidates. More established companies may have a competitive advantage over Carisma due to their larger size and cash resources or greater clinical development and commercialization capabilities. Carisma may not be able to successfully complete such negotiations and ultimately acquire the rights to the intellect al property surrounding the additional product candidates that it may seek to acquire.

Third parties may initiate legal proceedings alleging that Carisma is infringing, misappropriating or otherwise violating their intellectual property rights, the outcome of which would be uncertain and could have a material adverse effect on the success of its business.

Carisma's commercial success depends upon its ability and the ability of its collaborators to develop, manufacture, market and sell its product candidates and use its proprietary technologies without infringing, misappropriating or otherwise violating the intellectual property and proprietary rights of third parties. There is considerable patent and other intellectual property litigation in the biopharmaceutical industry. Carisma may become party to, or threatened with, adversarial proceedings or litigation regarding intellectual property rights with respect to its technology and product candidates, including interference proceedings, post grant review, *inter partes* review, and derivation proceedings before the USPTO and similar proceedings in foreign jurisdictions, such as opposition proceedings before the European Patent Office. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which Carisma is pursuing development candidates. As the biopharmaceutical industry expands and more patents are issued, the risk increases that its technologies or product candidates that Carisma may identify may be subject to claims of infringement of the patent rights of third parties.

The legal threshold for initiating litigation or contested proceedings is low, so even lawsuits or proceedings with a low probability of success might be initiated and require significant resources to defend. Litigation and contested proceedings can also be expensive and time-consuming, and its adversaries in these proceedings may have the ability to dedicate substantially greater resources to prosecuting these legal actions than Carisma can. The risks of being involved in such litigation and proceedings may increase if and as its product candidates near commercialization and as Carisma gains the greater visibility associated with being a public company. Third parties may assert infringement claims against it based on existing patents or patents that may be granted in the future, regardless of merit. Even if Carisma diligently searches third-party patents for potential infringement by its products or product candidates, it may not successfully find patents its products or product candidates may infringe. Carisma may not be aware of all such intellectual property rights potentially relating to its technology and product candidates and their uses, or Carisma may incorrectly conclude that third-party intellectual property is invalid or that its activities and product candidates do not infringe such intellectual property. Thus, Carisma does not know with certainty that its technology and product candidates, or its development and commercialization thereof, do not and will not infringe, misappropriate or otherwise violate any third party's intellectual property.

Third parties may assert that Carisma is employing its proprietary technology without authorization. There may be third-party patents or patent applications with claims to materials, formulations or methods, such as methods of manufacture or methods for treatment, related to the discovery, use or manufacture of the product candidates that Carisma may identify or related to its technologies. Because patent applications can take many years to issue, there may be currently pending patent applications which may later result in issued patents that the product candidates that Carisma may identify may infringe. In addition, third parties may obtain patents in the future and claim that use of its technologies infringe upon these patents. Moreover, as noted above, there may be existing patents that Carisma is not aware of or that Carisma has incorrectly concluded are invalid or not infringed by its activities. If any third-party patents were held by a court of competent jurisdiction to cover, for example, the manufacturing process of the product candidates that Carisma may identify, any molecules formed during the manufacturing process or any final product itself, the holders of any such patents may be able to block its ability to commercialize such product candidate unless Carisma obtained a license under the applicable patents, or until such patents expire.

Parties making claims against it may obtain injunctive or other equitable relief, which could effectively block its ability to further develop and commercialize the product candidates that Carisma may identify. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from its business. In the event of a successful claim of infringement against Carisma, it may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties, redesign its infringing products or obtain one or more licenses from third parties, which may be impossible or require substantial time and monetary expenditure.

Carisma may choose to take a license or, if it is found to infringe, misappropriate or otherwise violate a third party's intellectual property rights, it could also be required to obtain a license from such third party to continue developing, manufacturing and marketing its technology and product candidates. However, it may not be able to obtain any required license on commercially reasonable terms or at all. Even if it is able to obtain a license, it could be non-exclusive, thereby giving its competitors and other third parties access to the same technologies licensed to it and could require it to make substantial licensing and royalty payments. Carisma could be forced, including by court order, to cease developing, manufacturing and commercializing the infringing technology or product. In addition, Carisma could be found liable for significant monetary damages, including treble damages and attorneys' fees, if Carisma is found to have willfully infringed a patent or other intellectual property right, it could be forced to indemnify its customers or collaborators. A finding of infringement could prevent it from commercializing its product candidates or force it to cease some of its business operations, which could materially harm its business. In addition, Carisma may be forced to redesign its product candidates, seek new regulatory approvals and indemnify third parties pursuant to contractual agreements. Claims that Carisma has misappropriated the confidential information or trade secrets of third parties could have a similar material adverse effect on its business, financial condition, results of operations and prospects.

If its trademarks and trade names are not adequately protected, then Carisma may not be able to build name recognition in its markets of interest and its business may be adversely affected.

While Carisma seeks to protect the trademarks and trade names it uses in the United States and in other countries, it may be unsuccessful in obtaining registrations or otherwise protecting these trademarks and trade names, which it needs to build name recognition in its markets of interest and among potential partners or customers. Carisma relies on both registration and common law protection for its trademarks. Its registered or unregistered trademarks or trade names may be challenged, infringed, diluted or declared generic, or determined to be infringing on other marks. At times, competitors may adopt trademarks and trade names similar to ours, or collaborators may fail to use Carisma's trade names or trademarks, thereby impeding its ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of its registered or unregistered trademarks. If Carisma is unable to protect its rights to trademarks and trade names, Carisma may be prevented from using such marks and names unless Carisma enters into appropriate royalty, license or coexistence agreements, which may not be available or may not be available on commercially reasonable terms.

During trademark registration proceedings, Carisma may receive rejections. Although Carisma would be given an opportunity to respond to those rejections, it may be unable to overcome such rejections. In addition, in the USPTO and in comparable agencies in many foreign jurisdictions, third parties are given an opportunity to oppose pending trademark applications and to seek to cancel registered trademarks. Opposition or cancellation proceedings may be filed against its trademarks, and its trademarks may not survive such proceedings. Effective trademark protection may not be available or may not be sought in every country in which its products are made available. Any name Carisma proposes to use for its products in the United States must be approved by the FDA, regardless of whether Carisma has registered it, or applied to register it, as a trademark. The FDA typically conducts a review of proposed product names, including an evaluation of potential for confusion with other product names. If the FDA objects to any of its proposed product names, Carisma may be required to expend significant additional resources in an effort to identify a usable substitute name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA. If Carisma is unable to establish name recognition based on its trademarks and trade names, Carisma may not be able to compete effectively and its business may be adversely affected.

Carisma may license its trademarks and trade names to third parties, such as distributors and collaborators. Though these license agreements may provide guidelines for how Carisma's trademarks and trade names may be used, a breach of these agreements or misuse of or failure to use its trademarks and trade names by its licensees may jeopardize its rights in or diminish the goodwill associated with its trademarks and trade names. Carisma's efforts to enforce or protect its proprietary rights related to trademarks, trade names, trade secrets, know-how, domain names, copyrights or other intellectual property may be ineffective and could result in substantial costs and diversion of resources and could adversely affect Carisma's business, financial condition, results of operations and prospects.

Intellectual property litigation or other legal proceedings relating to intellectual property could cause it to spend substantial resources and distract its personnel from their normal responsibilities.

Even if resolved in its favor, litigation or other legal proceedings relating to intellectual property claims may cause it to incur significant expenses and could distract its technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of its common stock. Such litigation or proceedings could substantially increase its operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. Carisma may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of its competitors may be able to sustain the costs of such litigation or proceedings more effectively than Carisma can because of their greater financial resources and may also have an advantage in such proceedings due to their more mature and developed intellectual property portfolios. Uncertainties resulting from the initiation and continuation of intellectual property litigation or other proceedings could compromise its ability to compete in the marketplace.

Obtaining and maintaining patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and its patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance, renewal and annuity fees and various other government fees on any issued patent and pending patent application must be paid to the USPTO and foreign patent agencies in several stages or annually over the lifetime of its patents and patent applications. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. In certain circumstances, Carisma relies on its licensing partners to pay these fees to, or comply with the procedural and documentary rules of, the relevant patent agency. With respect to its patents, Carisma relies on an annuity service, outside firms and outside counsel to remind it of the due dates and to make payment after Carisma instructs them to do so. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Non-compliance events that could result in abandonment or lapse of a patent or patent application include failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. In such an event, potential competitors might be able to enter the market with similar or identical products or technology. If Carisma or its licensors fail to maintain the patents and patent applications covering its product candidates, it would have a material adverse effect on its business, financial condition, results of operations and prospects.

If Carisma fails to comply with its obligations in its current and future intellectual property licenses and funding arrangements with third parties, or otherwise experience disruptions to its business relationships with its licensors, Carisma could lose intellectual property rights that are important to its business.

Carisma is party to a number license and research agreements. Some of these agreements provide Carisma with the intellectual property rights required for the development of its product candidates, including the license agreement with the University of Pennsylvania. These licenses and research agreements and similar agreements in the future may impose diligence, development and commercialization timelines, and milestone payment, royalty, insurance and other obligations on Carisma. If Carisma fails to comply with such obligations, the parties to these agreements may decide to terminate the agreements or require Carisma to grant them certain rights, in which Carisma may not be able to develop, manufacture, or market any products without the rights granted to it by these agreements and may face other penalties. Any such occurrences could adversely affect the value of any product candidate being developed, including CT-0508.

For a variety of purposes, Carisma will likely enter into additional licensing and funding arrangements with third parties that may impose similar obligations on Carisma. Termination of these agreements or reduction or elimination of its rights under these agreements may result in it having to negotiate new or restated agreements with less favorable terms, or cause it to lose its rights under these agreements, including its rights to important intellectual property or technology, which would have a material adverse effect on its business, financial condition, results of operations and prospects. While Carisma still faces all of the risks described herein with respect to such agreements, Carisma cannot prevent third parties from also accessing those technologies. In addition, its licenses may place restrictions on its future business opportunities.

In addition to the above risks, intellectual property rights that Carisma licenses in the future may include sublicenses under intellectual property owned by third parties, in some cases through multiple tiers. The actions of its licensors may therefore affect its rights to use its sublicensed intellectual property, even if Carisma is in compliance with all of the obligations under its license agreements. Should its licensors or any of the upstream licensors fail to comply with their obligations under the agreements pursuant to which they obtain the rights that are sublicensed to Carisma, or should such agreements be terminated or amended, its ability to develop and commercialize its product candidates may be materially harmed.

- Disputes may arise regarding intellectual property subject to a licensing agreement, including:
- the scope of rights granted under the license agreement and other interpretation related issues;
- the extent to which its technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- the sublicensing of patent and other rights under its collaborative development relationships;
- its diligence obligations under the license agreement and what activities satisfy those diligence obligations;
- the inventorship and ownership of inventions and know-how resulting from the joint creation or use of intellectual property by its licensors and it and its partners; and
- the payment obligations with respect to licensed technology.

In addition, the agreements under which Carisma currently licenses intellectual property or technology from third parties are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what Carisma believes to be the scope of its rights to the relevant intellectual property or technology or increase what Carisma believes to be its financial or other obligations under the relevant agreement, either of which could have a material adverse effect on its business, financial condition, results of operations and prospects. Moreover, if disputes over intellectual property that Carisma has licensed prevent or impair its ability to maintain its current licensing arrangements on commercially acceptable terms, Carisma may be unable to successfully develop and commercialize the affected technology and product candidates, which could have a material adverse effect on its business, financial conditions, results of operations and prospects.

Further, licensors could retain the right to prosecute and defend the intellectual property rights licensed to Carisma, in which case Carisma would depend on its licensors to control the prosecution, maintenance and enforcement of all of its licensed and sublicensed intellectual property, and even when it does have such rights, Carisma may require the cooperation of its licensors and upstream licensors, which may not be forthcoming. Licensors may determine not to pursue litigation against other companies or may pursue such litigation less aggressively than Carisma would. Its business could be adversely affected if Carisma or its licensors are unable to prosecute, maintain and enforce its licensed and sublicensed intellectual property effectively.

Carisma’s current or future licensors may have relied on third-party consultants or collaborators or on funds from third parties such that its licensors are not the sole and exclusive owners of the patents and patent applications Carisma in-licenses. If other third parties have ownership rights to patents or patent applications Carisma in-licenses, they may be able to license such patents to its competitors, and its competitors could market competing products and technology. This could have a material adverse effect on its competitive position, business, financial conditions, results of operations and prospects.

In spite of its best efforts, its licensors might conclude that Carisma has materially breached its license agreements and might therefore terminate the license agreements, thereby removing its ability to develop and commercialize product candidates and technology covered by these license agreements. If these in-licenses are terminated, or if the underlying intellectual property fails to provide the intended exclusivity, competitors would have the freedom to seek regulatory approval of, and to market, products and technologies identical to its. This could have a material adverse effect on its competitive position, business, financial condition, results of operations and prospects.

Carisma may not be able to protect its intellectual property and proprietary rights throughout the world.

Filing, prosecuting and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and the laws of foreign countries may not protect its rights to the same extent as the laws of the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States, and even where such protection is nominally available, judicial and governmental enforcement of such intellectual property rights may be lacking. Consequently, Carisma may not be able to prevent third parties from practicing its inventions in all countries outside the United States, or from selling or importing products made using its inventions in and into the United States or other jurisdictions. Competitors may use its technologies in jurisdictions where Carisma has not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where Carisma has patent protection or licenses but enforcement is not as strong as that in the United States. These products may compete with its products, and its patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets, and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for it to stop the infringement of its patents or marketing of competing products in violation of its intellectual property and proprietary rights generally. In addition, certain jurisdictions do not protect to the same extent or at all inventions that constitute new methods of treatment.

Proceedings to enforce its intellectual property and proprietary rights in foreign jurisdictions could result in substantial costs and divert its efforts and attention from other aspects of its business, could put its patents at risk of being invalidated, held unenforceable or interpreted narrowly, could put its patent applications at risk of not issuing, and could provoke third parties to assert claims against Carisma. Carisma may not prevail in any lawsuits that Carisma initiates, and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, its efforts to enforce its intellectual property and proprietary rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that Carisma develops or licenses.

Many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such patent. If Carisma or any of its licensors are forced to grant a license to third parties with respect to any patents relevant to its business, its competitive position may be impaired, and its business, financial condition, results of operations and prospects may be adversely affected.

Carisma may be subject to claims challenging the inventorship or ownership of its patents and other intellectual property.

Carisma or its licensors may be subject to claims that former employees, collaborators or other third parties have an interest in its owned or in-licensed patents, trade secrets or other intellectual property as an inventor or co-inventor. For example, Carisma or its licensors may have inventorship disputes arise from conflicting obligations of employees, consultants or others who are involved in developing its product candidates. Although it is Carisma's policy to require its employees and contractors who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to Carisma, it may be unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that Carisma regards as its own, and Carisma cannot be certain that its agreements with such parties will be upheld in the face of a potential challenge, or that they will not be breached, for which Carisma may not have an adequate remedy. The assignment of intellectual property rights may not be self-executing or the assignment agreements may be breached, and litigation may be necessary to defend against these and other claims challenging inventorship or its or its licensors' ownership of its owned or in-licensed patents, trade secrets or other intellectual property. If Carisma or its licensors fail in defending any such claims, in addition to paying monetary damages, Carisma may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, intellectual property that is important to its product candidates. Even if Carisma is successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees. Any of the foregoing could have a material adverse effect on its business, financial condition, results of operations and prospects.

Carisma may be subject to claims by third parties asserting that its employees, consultants or contractors have wrongfully used or disclosed confidential information of third parties, including of their current or former employers or claims asserting Carisma has misappropriated their intellectual property, or is claiming ownership of what Carisma regards as its own intellectual property.

Many of Carisma's employees, consultants and contractors have been previously employed at universities or other biopharmaceutical companies, including its competitors or potential competitors. Although Carisma tries to ensure that its employees, consultants and contractors do not use the proprietary information or know-how of others in their work for Carisma, Carisma may be subject to claims that these individuals or Carisma have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such individual's current or former employer. Litigation may be necessary to defend against these claims.

If Carisma fails in prosecuting or defending any such claims, in addition to paying monetary damages, Carisma may lose valuable intellectual property rights or personnel, which could have a material adverse effect on its competitive business position and prospects. Such intellectual property rights could be awarded to a third party, and Carisma could be required to obtain a license from such third party to commercialize its technology or products, which license may not be available on commercially reasonable terms, or at all, or such license may be non-exclusive. Even if Carisma is successful in prosecuting or defending against such claims, litigation could result in substantial costs and be a distraction to its management and employees.

If Carisma is unable to protect the confidentiality of its trade secrets, its business and competitive position would be harmed.

In addition to seeking patents for some of its technology and product candidates, Carisma also relies on trade secrets and confidentiality agreements to protect its unpatented know-how, technology and other proprietary information, to maintain its competitive position. Carisma seeks to protect its trade secrets and other proprietary technology, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as its employees, corporate collaborators, outside scientific collaborators, contract research organizations, contract manufacturers, consultants, advisors and other third parties. Carisma may have also entered into confidentiality and invention or patent assignment agreements with its employees and consultants, but Carisma cannot guarantee that it has entered into such agreements with each party that may have or has had access to its trade secrets or proprietary technology. To the extent Carisma becomes involved in litigation that may require discovery of its trade secrets, know-how and other proprietary technology, Carisma will seek to secure protective orders from the court that bind the parties with access to the discovered information. Despite these efforts, any of these parties may breach the agreements and disclose its proprietary information, including its trade secrets, and Carisma may not be able to obtain adequate remedies for such breaches. Detecting the disclosure or misappropriation of a trade secret and enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside of the United States are less willing or unwilling to protect trade secrets. In addition, Carisma cannot be certain that proprietary technical information and related confidential documents that Carisma has shared with its collaborators and/or submitted to governmental agencies, including regulatory agencies for evaluation and supervision of pharmaceutical products, will be kept confidential. If any of its trade secrets were to be lawfully obtained or independently developed by a competitor or other third party, Carisma would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with Carisma. If any of its trade secrets were to be disclosed to or independently developed by a competitor or other third party, its competitive position would be materially and adversely harmed.

Intellectual property rights do not necessarily address all potential threats to Carisma.

The degree of future protection afforded by Carisma's intellectual property rights is uncertain because intellectual property rights have limitations and may not adequately protect its business or permit it to maintain its competitive advantage. For example:

- others may be able to make product candidates that are similar to Carisma's but that are not covered by the claims of the patents that it owns or licenses;
- Carisma, or its license partners or current or future collaborators, might not have been the first to make the inventions covered by the issued patent or pending patent applications that it licenses or may own in the future;
- Carisma, or its license partners or current or future collaborators, might not have been the first to file patent applications covering its inventions;
- others may independently develop similar or alternative technologies or duplicate any of its technologies without infringing its owned or in-licensed intellectual property rights;
- it is possible that its owned or in-licensed pending patent applications or those Carisma may own or in-license in the future will not lead to issued patents;
- claims of issued patents that Carisma holds rights to may be held invalid or unenforceable, including as a result of legal challenges by its competitors;
- its competitors might conduct research, development, testing or commercialization activities in countries where Carisma does not have patent rights and then use the information learned from such activities to develop competitive products for sale in its major commercial markets;
- Carisma cannot ensure that any of its patents, or any of its pending patent applications, if issued, or those of its licensors, will include claims having a scope sufficient to protect its product candidates;
- Carisma cannot ensure that any patents issued to it or its licensors will provide a basis for an exclusive market for its commercially viable product candidates or will provide it with any competitive advantages;
- the U.S. Supreme Court, other federal courts, Congress, the USPTO or similar foreign authorities may change the standards of patentability and any such changes could narrow or invalidate, or change the scope of, Carisma's or its licensors' patents;
- patent terms may be inadequate to protect its competitive position on its product candidates for an adequate amount of time;
- Carisma cannot ensure that its commercial activities or product candidates will not infringe upon the patents of others;
- Carisma cannot ensure that it will be able to successfully commercialize its product candidates on a substantial scale, if approved, before the relevant patents that it owns or licenses expire;
- Carisma may not develop additional proprietary technologies that are patentable;
- the patents of others may harm its business; and
- Carisma may choose not to file a patent in order to maintain certain trade secrets or know-how, and a third party may subsequently file a patent covering such intellectual property.

Should any of these events occur, they could have a material adverse effect on its business, financial condition, results of operations and prospects.

Risks Related to Regulatory Approval and Other Legal Compliance Matters

The regulatory approval process of the FDA is lengthy, time-consuming and inherently unpredictable, and if Carisma is ultimately unable to obtain marketing approval for its product candidates, its business will be substantially harmed.

The time required to obtain approval by the FDA is unpredictable but typically takes many years following the commencement of clinical trials and depends upon numerous factors, including the substantial discretion of the regulatory authorities. In addition, approval policies, regulations or the type and amount of clinical data necessary to gain approval may change during the course of a product candidate's clinical development and may vary among jurisdictions. Carisma has not obtained marketing approval for any product candidate and it is possible that none of its existing product candidates, or any product candidates it may seek to develop in the future will ever obtain marketing approval.

Carisma's product candidates could fail to receive marketing approval for many reasons, including the following:

- the FDA may disagree with the design or implementation of Carisma's clinical trials;
- Carisma may be unable to demonstrate to the satisfaction of the FDA that a product candidate is safe and effective for its proposed indication;
- results of clinical trials may not meet the level of statistical significance required by the FDA for approval;
- Carisma may be unable to demonstrate that a product candidate's clinical and other benefits outweigh its safety risks;
- the FDA may disagree with Carisma's interpretation of data from pre-clinical studies or clinical trials;
- data collected from clinical trials of Carisma's product candidates may not be sufficient to support the submission of a new drug application, or NDA, to the FDA or other submission or to obtain marketing approval in the United States;
- the FDA may find deficiencies with or fail to approve the manufacturing processes or facilities of third-party manufacturers with which Carisma contracts for clinical and commercial supplies; and
- the approval policies or regulations of the FDA may significantly change in a manner rendering Carisma's clinical data insufficient for approval.

This lengthy approval process as well as the unpredictability of future clinical trial results may result in Carisma failing to obtain marketing approval to market any of its product candidates, which would significantly harm its business, results of operations and prospects. The FDA has substantial discretion in the approval process and determining when or whether marketing approval will be obtained for any of Carisma's product candidates. Even if Carisma believes the data collected from clinical trials of its product candidates are promising, such data may not be sufficient to support approval by the FDA.

In addition, even if Carisma were to obtain approval, regulatory authorities may approve any of Carisma's product candidates for fewer or more limited indications than it requests, may not approve the price it intends to charge for its products, may grant approval contingent on the performance of costly post-marketing clinical trials, or may approve a product candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate. Any of the foregoing scenarios could materially harm the commercial prospects for Carisma's product candidates.

Even if Carisma completes the necessary pre-clinical studies and clinical trials, the marketing approval process is expensive, time-consuming and uncertain and may prevent Carisma from obtaining approvals for the commercialization of some or all of its product candidates. If Carisma is not able to obtain, or if there are delays in obtaining, required regulatory approvals, it will not be able to commercialize, or will be delayed in commercializing, its product candidates, and its ability to generate revenue will be materially impaired.

Carisma's product candidates and the activities associated with their development and commercialization, including their design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising, promotion, sale and distribution, export and import are subject to comprehensive regulation by the FDA and other regulatory authorities in the United States and by the EMA and other regulatory authorities outside of the United States. Failure to obtain marketing approval for a product candidate will prevent Carisma from commercializing the product candidate. Carisma has not submitted an application for or received marketing approval for any of its product candidates in the United States or in any other jurisdiction.

Carisma has only limited experience in filing and supporting the applications necessary to gain marketing approvals and expect to rely on third-party clinical research organizations or other third-party consultants or vendors to assist it in this process. Securing marketing approval requires the submission of extensive pre-clinical and clinical data and supporting information, including manufacturing information, to the various regulatory authorities for each therapeutic indication to establish the product candidate's safety and efficacy. Carisma's product candidates may not be effective, may be only moderately effective or may prove to have undesirable or unintended side effects, toxicities or other characteristics that may preclude Carisma obtaining marketing approval or prevent or limit commercial use. New cancer drugs frequently are indicated only for patient populations that have not responded to an existing therapy or have relapsed.

The process of obtaining marketing approvals, both in the United States and abroad, is expensive, may take many years if additional clinical trials are required, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity and novelty of the product candidates involved. Changes in marketing approval policies during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for each submitted product application, may cause delays in the approval or rejection of an application. Regulatory authorities have substantial discretion in the approval process and may refuse to accept any application or may decide that Carisma's data is insufficient for approval and require additional pre-clinical, clinical or other studies. In addition, varying interpretations of the data obtained from pre-clinical and clinical testing could delay, limit or prevent marketing approval of a product candidate. Any marketing approval Carisma ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved product not commercially viable.

If Carisma experiences delays in obtaining approval or if it fails to obtain approval of its product candidates, the commercial prospects for its product candidates may be harmed and its ability to generate revenues will be materially impaired.

Failure to obtain marketing approval in foreign jurisdictions would prevent Carisma's product candidates from being marketed in such jurisdictions, which, in turn, would materially impair Carisma's ability to generate revenue.

In order to market and sell its products in the European Union and many other foreign jurisdictions, Carisma and its collaborators must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The marketing approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. In addition, in many countries outside the United States, it is required that the product be approved for reimbursement before the product can be approved for sale in that country. Carisma or these third parties may not obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA. The failure to obtain approval in one jurisdiction may negatively impact Carisma's ability to obtain approval elsewhere. Carisma may not be able to file for marketing approvals and may not receive necessary approvals to commercialize its products in any jurisdiction, which would materially impair its ability to generate revenue.

Additionally, Carisma could face heightened risks with respect to seeking marketing approval in the United Kingdom as a result of the withdrawal of the United Kingdom from the European Union, commonly referred to as Brexit. The United Kingdom is no longer part of the European Single Market and European Union Customs Union. As of January 1, 2021, the Medicines and Healthcare products Regulatory Agency, or the MHRA, became responsible for supervising medicines and medical devices in Great Britain, comprising England, Scotland and Wales under domestic law, whereas Northern Ireland will continue to be subject to European Union rules under the Northern Ireland Protocol. The MHRA will rely on the Human Medicines Regulations 2012 (SI 2012/1916) (as amended), or the HMR, as the basis for regulating medicines. The HMR has been incorporated into the domestic law of the body of European Union law instruments governing medicinal products that pre-existed prior to the United Kingdom's withdrawal from the European Union. The MHRA may rely on a decision taken by the European Commission on the approval of a new marketing authorization via the centralized procedure until December 31, 2023. Any delay in obtaining, or an inability to obtain, any marketing approvals, as a result of Brexit or otherwise, may force Carisma to restrict or delay efforts to seek regulatory approval in the United Kingdom for its product candidates, which could significantly and materially harm Carisma's business.

Carisma expects that it will be subject to additional risks in commercializing any of its product candidates that receive marketing approval outside the United States, including tariffs, trade barriers and regulatory requirements; economic weakness, including inflation, or political instability in particular foreign economies and markets; compliance with tax, employment, immigration and labor laws for employees living or traveling abroad; foreign currency fluctuations, which could result in increased operating expenses and reduced revenue, and other obligations incident to doing business in another country; and workforce uncertainty in countries where labor unrest is more common than in the United States.

Inadequate funding for the FDA, the Securities and Exchange Commission, or the SEC, and other government agencies, including from government shutdowns, or other disruptions to these agencies' operations, could hinder their ability to hire and retain key leadership and other personnel, prevent new products and services from being developed or commercialized in a timely manner or otherwise prevent those agencies from performing normal business functions on which the operation of Carisma's business may rely, which could negatively impact its business.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel and accept the payment of user fees, and statutory, regulatory and policy changes. Average review times at the FDA have fluctuated in recent years as a result. Disruptions at the FDA and other agencies may also slow the time necessary for new product candidates to be reviewed and/or approved by necessary government agencies, which would adversely affect Carisma's business. In addition, government funding of the SEC and other government agencies on which Carisma's operations may rely, including those that fund research and development activities, is subject to the political process, which is inherently fluid and unpredictable.

For example, over the last several years the U.S. government has shut down several times and certain regulatory agencies, such as the FDA and the SEC, have had to furlough critical FDA, SEC and other government employees and stop critical activities. If a prolonged government shutdown occurs, it could significantly impact the ability of the FDA to timely review and process Carisma's regulatory submissions, which could have a material adverse effect on Carisma's business. Further, future government shutdowns could impact Carisma's ability to access the public markets and obtain necessary capital in order to properly capitalize and continue Carisma's operations.

Separately, in response to the COVID-19 pandemic, a number of companies announced receipt of complete response letters due to the FDA's inability to complete required inspections for their applications. As of early 2022, the FDA has resumed inspections of domestic and foreign facilities to ensure timely reviews of applications for medical products. However, the FDA may not be able to continue its current pace and review timelines could be extended, including where a pre-approval inspection or an inspection of clinical sites is required. Moreover, on January 30, 2023, the Biden administration announced that it will end the public health emergency declarations related to COVID-19 on May 11, 2023. On January 31, 2023, the FDA indicated that it would soon issue a Federal Register notice describing how the termination of the public health emergency will impact the FDA's COVID-19 related guidance. At this point, it is unclear how, if at all, these developments will impact Carisma's efforts to develop and commercialize its product candidates. Regulatory authorities outside the United States have adopted or may adopt similar restrictions or other policy measures in response to the COVID-19 pandemic and may experience delays in their regulatory activities.

If a prolonged government shutdown or other disruption occurs, it could significantly impact the ability of the FDA to timely review and process Carisma's regulatory submissions, which could have a material adverse effect on its business. Future shutdowns or other disruptions could also affect other government agencies such as the SEC, which may also impact Carisma's business by delaying review of its public filings, to the extent such review is necessary, and Carisma's ability to access the public markets.

Regulatory requirements governing gene therapy products are periodically updated and may continue to change in the future.

The FDA has established the Office of Tissues and Advanced Therapies, or the OTAT, within the Center for Biologics Evaluation and Research, or the CBER, to consolidate the review of gene therapy and related products, and has established the Cellular, Tissue and Gene Therapies Advisory Committee to advise CBER in its review. In September 2022, the FDA announced retitling of OTAT to the Office of Therapeutic Products, or OTP, and elevation of OTP to a "Super Office" to meet its growing cell and gene therapy workload and new commitments under the Prescription Drug User Fee Act agreement for fiscal years 2023-2027. Gene therapy clinical trials conducted at institutions that receive funding for recombinant DNA research from the U.S. National Institutes of Health, or the NIH, also are potentially subject to review by the Office of Biotechnology Activities' Recombinant DNA Advisory Committee, or the RAC; however, the NIH announced that the RAC will only publicly review clinical trials if the trials cannot be evaluated by standard oversight bodies and pose unusual risks. Although the FDA decides whether individual gene therapy protocols may proceed, the RAC public review process, if undertaken, can delay the initiation of a clinical trial, even if the FDA has reviewed the trial design and details and approved its initiation. Conversely, the FDA can put an IND on a clinical hold even if the RAC has provided a favorable review or an exemption from in-depth, public review. If Carisma were to engage an NIH-funded institution to conduct a clinical trial, that institution's institutional biosafety committee, or IBC, as well as its IRB would need to review the proposed clinical trial to assess the safety of the trial. In addition, adverse developments in clinical trials of gene therapy products conducted by others may cause the FDA or other oversight bodies to change the requirements for approval of Carisma's product candidates.

The FDA has issued various guidance documents regarding gene therapies, including final guidance documents released in January 2020 relating to chemistry, manufacturing and controls information for gene therapy INDs, gene therapies for rare diseases and gene therapies for retinal disorders. Although the FDA has indicated that these and other guidance documents it previously issued are not legally binding, Carisma believes that its compliance with them is likely necessary to gain approval for any gene therapy product candidate that Carisma may develop. The guidance documents provide additional factors that the FDA will consider at each of the above stages of development and relate to, among other things, the proper pre-clinical assessment of gene therapies; the chemistry, manufacturing, and control information that should be included in an IND application; the proper design of tests to measure product potency in support of an IND or biologics license application, or BLA; and measures to observe delayed adverse effects in subjects who have been exposed to investigational gene therapies when the risk of such effects is high. Further, the FDA usually recommends that sponsors observe subjects for potential gene therapy-related delayed adverse events for a 15-year period, including a minimum of five years of annual examinations followed by 10 years of annual queries, either in person or by questionnaire.

Further, for a gene therapy product, the FDA also will not approve the product if the manufacturer is not in compliance with good tissue practices, or GTP. These standards are found in FDA regulations and guidance that govern the methods used in, and the facilities and controls used for, the manufacture of human cells, tissues, and cellular and tissue based products, or HCT/Ps, which are human cells or tissue intended for implantation, transplant, infusion, or transfer into a human recipient. The primary intent of the GTP requirements is to ensure that cell and tissue based products are manufactured in a manner designed to prevent the introduction, transmission, and spread of communicable disease. FDA regulations also require tissue establishments to register and list their HCT/Ps with the FDA and, when applicable, to evaluate donors through screening and testing.

Finally, ethical, social and legal concerns about gene therapy, genetic testing and genetic research could result in additional regulations or prohibiting the processes that Carisma may use. Federal and state agencies, congressional committees and foreign governments have expressed their intentions to further regulate biotechnology. More restrictive regulations or claims that Carisma's product candidates are unsafe or pose a hazard could prevent Carisma from commercializing any products. New government requirements may be established that could delay or prevent regulatory approval of Carisma's product candidates under development. It is impossible to predict whether legislative changes will be enacted, regulations, policies or guidance changed, or interpretations by agencies or courts changed, or what the impact of such changes, if any, may be.

As Carisma advances its product candidates through clinical development, it will be required to consult with these regulatory and advisory groups, and comply with applicable guidelines. These regulatory review committees and advisory groups and any new guidelines they promulgate may lengthen the regulatory review process, require Carisma to perform additional studies, increase Carisma's development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of Carisma's product candidates or lead to significant post-approval limitations or restrictions. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product to market could decrease Carisma's ability to generate sufficient product revenue.

Even if Carisma, or any collaborators, obtains marketing approvals for its product candidates, the terms of approvals and ongoing regulation of its products may limit how Carisma, or any collaborators, manufacture and market its products, which could materially impair Carisma's ability to generate revenue.

Once marketing approval has been granted, an approved product and its manufacturer and marketer are subject to ongoing review and extensive regulation. Carisma, and any collaborators, must therefore comply with requirements concerning advertising and promotion for any of its product candidates for which Carisma or they obtain marketing approval. Promotional communications with respect to prescription drugs are subject to a variety of legal and regulatory restrictions and must be consistent with the information in the product's approved labeling. Thus, Carisma, and any collaborators will not be able to promote any products developed for indications or uses for which they are not approved.

In addition, manufacturers of approved products and those manufacturers' facilities are required to comply with extensive FDA requirements, including ensuring that quality control and manufacturing procedures conform to cGMPs, which include requirements relating to quality control and quality assurance as well as the corresponding maintenance of records and documentation and reporting requirements. Carisma, its third-party manufacturers, any collaborators and their third-party manufacturers could be subject to periodic unannounced inspections by the FDA to monitor and ensure compliance with cGMPs.

Accordingly, assuming Carisma, or any collaborators, receive marketing approval for one or more of their product candidates, Carisma, and any collaborators, and Carisma and any collaborators' respective third-party manufacturers will continue to expend time, money and effort in all areas of regulatory compliance, including manufacturing, production, product surveillance and quality control.

If Carisma and such collaborators are not able to comply with post-approval regulatory requirements, Carisma and such collaborators could have the marketing approvals for their products withdrawn by regulatory authorities and Carisma or such collaborators', ability to market any future products could be limited, which could adversely affect Carisma's ability to achieve or sustain profitability. Further, the cost of compliance with post-approval regulations may have a negative effect on Carisma's business, operating results, financial condition and prospects.

Carisma may seek certain designations for its product candidates, including Breakthrough Therapy, Fast Track and Priority Review designations in the United States, but it might not receive such designations, and even if it does, such designations may not lead to a faster development or regulatory review or approval process.

Carisma may seek certain designations for one or more of its product candidates that could expedite review and approval by the FDA. A Breakthrough Therapy product is defined as a product that is intended, alone or in combination with one or more other products, to treat a serious condition, and preliminary clinical evidence indicates that the product may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. For products that have been designated as Breakthrough Therapies, interaction and communication between the FDA and the sponsor of the trial can help to identify the most efficient path for clinical development while minimizing the number of patients placed in ineffective control regimens.

The FDA may also designate a product for Fast Track review if it is intended, whether alone or in combination with one or more other products, for the treatment of a serious or life-threatening disease or condition, and it demonstrates the potential to address unmet medical needs for such a disease or condition. For Fast Track products, sponsors may have greater interactions with the FDA and the FDA may initiate review of sections of a Fast Track product's application before the application is complete. This rolling review may be available if the FDA determines, after preliminary evaluation of clinical data submitted by the sponsor, that a Fast Track product may be effective.

Carisma may also seek a priority review designation for one or more of its product candidates. If the FDA determines that a product candidate offers major advances in treatment or provides a treatment where no adequate therapy exists, the FDA may designate the product candidate for priority review. A priority review designation means that the goal for the FDA to review an application is six months, rather than the standard review period of ten months.

These designations are within the discretion of the FDA. Accordingly, even if Carisma believes that one of its product candidates meets the criteria for these designations, the FDA may disagree and instead determine not to make such designation. Further, even if Carisma receives a designation, the receipt of such designation for a product candidate may not result in a faster development or regulatory review or approval process compared to products considered for approval under conventional FDA procedures and does not assure ultimate approval by the FDA, including the Fast Track designation Carisma received for CT-0508. In addition, even if one or more of Carisma's product candidates qualifies for these designations, the FDA may later decide that the product candidates no longer meet the conditions for qualification or decide that the time period for FDA review or approval will not be shortened.

Carisma, or its collaborators, may seek approval from the FDA or comparable foreign regulatory authorities to use accelerated development pathways for its product candidates. If Carisma, or its collaborators, are not able to use such pathways, Carisma, or they, may be required to conduct additional clinical trials beyond those that are contemplated, which would increase the expense of obtaining, and delay the receipt of, necessary marketing approvals, if Carisma, or they, receive them at all. In addition, even if an accelerated approval pathway is available to Carisma, or its collaborators, it may not lead to expedited approval of Carisma's product candidates, or approval at all.

Under the Federal Food, Drug, and Cosmetic Act and implementing regulations, the FDA may grant accelerated approval to a product candidate to treat a serious or life-threatening condition that provides meaningful therapeutic benefit over available therapies, upon a determination that the product has an effect on a surrogate endpoint or intermediate clinical endpoint that is reasonably likely to predict clinical benefit. The FDA considers a clinical benefit to be a positive therapeutic effect that is clinically meaningful in the context of a given disease, such as irreversible morbidity or mortality. For the purposes of accelerated approval, a surrogate endpoint is a marker, such as a laboratory measurement, radiographic image, physical sign, or other measure that is thought to predict clinical benefit, but is not itself a measure of clinical benefit. An intermediate clinical endpoint is a clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit measurement of a therapeutic effect that is considered reasonably likely to predict the clinical benefit of a drug. The accelerated approval pathway may be used in cases in which the advantage of a new drug over available therapy may not be a direct therapeutic advantage, but is a clinically important improvement from a patient and public health perspective. Prior to seeking such accelerated approval, Carisma, or its collaborators, will continue to seek feedback from the FDA or comparable foreign regulatory agencies and otherwise evaluate Carisma's, or their, ability to seek and receive such accelerated approval.

With passage of the FDORA in December 2022, Congress modified certain provisions governing accelerated approval of drug and biologic products. Specifically, the new legislation authorized the FDA to: require a sponsor to have its confirmatory clinical trial underway before accelerated approval is awarded, require a sponsor of a product granted accelerated approval to submit progress reports on its post-approval studies to the FDA every six months (until the study is completed; and use expedited procedures to withdraw accelerated approval of an NDA or BLA after the confirmatory trial fails to verify the product's clinical benefit. Further, the FDORA requires the FDA to publish on its website "the rationale for why a post-approval study is not appropriate or necessary" whenever it decides not to require such a study upon granting accelerated approval.

There can be no assurance that the FDA or foreign regulatory agencies will agree with Carisma's, or its collaborators', surrogate endpoints or intermediate clinical endpoints in any of Carisma's, or their, clinical trials, or that Carisma, or its collaborators, will decide to pursue or submit any additional application for accelerated approval or any other form of expedited development, review or approval. Similarly, there can be no assurance that, after feedback from the FDA or comparable foreign regulatory agencies, Carisma, or its collaborators, will continue to pursue or apply for accelerated approval or any other form of expedited development, review or approval. Furthermore, for any submission of an application for accelerated approval or application under another expedited regulatory designation, there can be no assurance that such submission or application will be accepted for filing or that any expedited development, review or approval will be granted on a timely basis, or at all.

A failure to obtain accelerated approval or any other form of expedited development, review or approval for Carisma's product candidates, or withdrawal of a product candidate, would result in a longer time period until commercialization of such product candidate, could increase the cost of development of such product candidate and could harm Carisma's competitive position in the marketplace.

Carisma may not be able to obtain orphan drug exclusivity for any product candidates it may develop, and even if it does, that exclusivity may not prevent the FDA or the EMA from approving other competing products.

Under the Orphan Drug Act, the FDA may designate a product as an orphan drug if it is a drug or biologic intended to treat a rare disease or condition. A similar regulatory scheme governs approval of orphan products by the EMA in the European Union. Generally, if a product candidate with an orphan drug designation subsequently receives the first marketing approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the FDA or the EMA from approving another marketing application for the same product for the same therapeutic indication for that time period. The applicable period is seven years in the United States and ten years in the European Union. The exclusivity period in the European Union can be reduced to six years if a product no longer meets the criteria for orphan drug designation, in particular if the product is sufficiently profitable so that market exclusivity is no longer justified.

In order for the FDA to grant orphan drug exclusivity to one of Carisma's products, the FDA must find that the product is indicated for the treatment of a condition or disease with a patient population of fewer than 200,000 individuals annually in the United States. The FDA may conclude that the condition or disease for which Carisma seeks orphan drug exclusivity does not meet this standard. Even if Carisma obtains orphan drug exclusivity for a product, that exclusivity may not effectively protect the product from competition because different products can be approved for the same condition. In addition, even after an orphan drug is approved, the FDA and comparable foreign regulatory authorities such as the EMA can subsequently approve the same product for the same condition if the FDA or such other authorities conclude that the later product is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care. Orphan drug exclusivity may also be lost if the FDA or EMA determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the product to meet the needs of the patients with the rare disease or condition.

In 2017, the Congress passed the FDA Reauthorization Act of 2017, or the FDARA. The FDARA, among other things, codified the FDA's pre-existing regulatory interpretation, to require that a drug sponsor demonstrate the clinical superiority of an orphan drug that is otherwise the same as a previously approved drug for the same rare disease in order to receive orphan drug exclusivity. Under omnibus legislation signed by former President Trump in December 2020, the requirement for a product to show clinical superiority applies to drugs and biologics that received orphan drug designation before enactment of FDARA in 2017, but have not yet been approved or licensed by the FDA.

The FDA and Congress may further reevaluate the Orphan Drug Act and its regulations and policies. This may be particularly true in light of a decision from the Court of Appeals for the 11th Circuit in September 2021 finding that, for the purpose of determining the scope of exclusivity, the term "same disease or condition" means the designated "rare disease or condition" and could not be interpreted by the FDA to mean the "indication or use." Thus, the court concluded, orphan drug exclusivity applies to the entire designated disease or condition rather than the "indication or use." Although there have been legislative proposals to overrule this decision, they have not been enacted into law. On January 23, 2023, the FDA announced that, in matters beyond the scope of that court order, the FDA will continue to apply its existing regulations tying orphan-drug exclusivity to the uses or indications for which the orphan drug was approved. Carisma does not know if, when, or how the FDA or Congress may change the orphan drug regulations and policies in the future, and it is uncertain how any changes might affect Carisma's business. Depending on what changes the FDA may make to its orphan drug regulations and policies, Carisma's business could be adversely impacted.

If Carisma is unable to successfully develop companion diagnostics for its product candidates and secure clearance or approval of such devices by the FDA and other regulatory authorities, or Carisma experiences significant delays in doing so, Carisma may not realize the full commercial potential of its therapeutics.

Carisma believes that its success will depend, in part, on its ability to develop companion diagnostics, which are assays or tests to identify an appropriate patient population for these product candidates. Carisma has little experience in the development of diagnostics and may not be successful in developing appropriate diagnostics to pair with any of its therapeutic product candidates that receive marketing approval. Companion diagnostics are subject to regulation by the FDA and similar regulatory authorities outside the United States as medical devices and require separate regulatory approval prior to commercialization. Given Carisma's limited experience in developing diagnostics, it relies and expects to continue to rely in part or in whole on third parties for their design and manufacture. Carisma also may in the future depend on other third parties for the development of other companion diagnostics for its therapeutic product candidates. If Carisma or its collaborators are unable to successfully develop companion diagnostics for Carisma's therapeutic product candidates, or experience delays in doing so:

- the development of Carisma's therapeutic product candidates may be adversely affected if Carisma is unable to appropriately select patients for enrollment in its clinical trials;
- Carisma's therapeutic product candidates may not receive marketing approval if safe and effective use of a therapeutic product candidate depends on an in vitro diagnostic; and
- Carisma may not realize the full commercial potential of any therapeutics that receive marketing approval if, among other reasons, Carisma is unable to appropriately select patients who are likely to benefit from therapy with its medicines.

As a result of any of these events, Carisma's business would be harmed, possibly materially.

Any product candidate for which Carisma, or any collaborators, obtain marketing approval could be subject to post-marketing restrictions or withdrawal from the market and Carisma, or any collaborators, may be subject to substantial penalties if Carisma, or any collaborators, fail to comply with regulatory requirements or if Carisma, or any collaborators, experience unanticipated problems with its products when and if any of them are approved.

Any product candidate for which Carisma, or any collaborators, obtain marketing approval, as well as the manufacturing processes, post-approval clinical data, labeling, advertising and promotional activities for such product, will be subject to continual requirements of and review by the FDA, EMA and other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, cGMP requirements relating to manufacturing, quality control, quality assurance and corresponding maintenance of records and documents, requirements regarding the distribution of samples to physicians and recordkeeping. Even if marketing approval of a product candidate is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval, including the requirement to implement a risk evaluation and mitigation strategy. New cancer drugs frequently are indicated only for patient populations that have not responded to an existing therapy or have relapsed. If any of Carisma's product candidates receives marketing approval, the accompanying label may limit the approved use of its drug in this way, which could limit sales of the product.

The FDA may also impose requirements for costly post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of the product, including the adoption and implementation of risk evaluation and mitigation strategies. The FDA and other regulatory agencies, including the Department of Justice, or the DOJ, closely regulate and monitor the post-approval marketing and promotion of drugs to ensure they are marketed and distributed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA, DOJ and other regulatory agencies impose stringent restrictions on manufacturers' communications regarding off-label use, and if Carisma does not market its products for their approved indications, it may be subject to enforcement action for off-label marketing by the FDA and other federal and state enforcement agencies. Violations of the Federal Food, Drug, and Cosmetic Act and other statutes, including the False Claims Act, relating to the promotion and advertising of prescription drugs may lead to investigations and enforcement actions alleging violations of federal and state healthcare fraud and abuse laws, as well as state consumer protection laws.

In addition, later discovery of previously unknown side effects or other problems with Carisma's products or its manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may yield various results, including:

- restrictions on such products, manufacturers or manufacturing processes;
- restrictions and warnings on the labeling or marketing of a product;
- restrictions on product distribution or use;
- requirements to conduct post-marketing studies or clinical trials;
- receipt of warning letters or untitled letters;
- withdrawal of the products from the market;
- refusal to approve pending applications or supplements to approved applications that Carisma submits;
- recall of products;
- fines, restitution or disgorgement of profits or revenues;
- suspension or withdrawal of marketing approvals;
- suspension of any ongoing clinical trials;
- damage to relationships with any potential collaborators;
- unfavorable press coverage and damage to Carisma's reputation;
- refusal to permit the import or export of Carisma's products;
- product seizure;
- injunctions or the imposition of civil or criminal penalties; or
- litigation involving patients using Carisma's products.

In addition, manufacturers of approved products and those manufacturers' facilities are required to comply with extensive FDA requirements, including ensuring that quality control and manufacturing procedures conform to cGMPs applicable to drug manufacturers or quality assurance standards applicable to medical device manufacturers, which include requirements relating to quality control and quality assurance as well as the corresponding maintenance of records and documentation and reporting requirements. Carisma, any contract manufacturers it may engage in the future, its collaborators and their contract manufacturers will also be subject to other regulatory requirements, including submissions of safety and other post-marketing information and reports, registration and listing requirements, requirements regarding the distribution of samples to clinicians, recordkeeping, and costly post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of the product such as the requirement to implement a risk evaluation and mitigation strategy.

Carisma's relationships with healthcare providers, physicians and third-party payors will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose Carisma to civil, criminal and administrative sanctions, contractual damages, reputational harm and diminished future profits and earnings.

Healthcare providers, physicians and third-party payors will play a primary role in the recommendation and prescription of any drugs for which Carisma obtains marketing approval. Carisma's future arrangements with third-party payors, healthcare providers and physicians may expose it to broadly applicable state and federal fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which Carisma markets, sells and distributes any drugs for which it obtains marketing approval. These include the following:

- *Anti-Kickback Statute*, which prohibits, among other things, persons and entities from knowingly and willfully soliciting, offering, paying, or receiving remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchasing, ordering, leasing, arranging for, or recommending the purchasing, ordering, or leasing of, any good or service for which payment may be made, in whole or in part, under a federal healthcare program such as Medicare or Medicaid;
- *False Claims Act* - the federal civil and criminal false claims laws, including the civil False Claims Act, and Civil Monetary Penalties Law, which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, to the federal government, false or fraudulent claims for payment or knowingly making, using or causing to made or used a false record or statement material to a false or fraudulent claim or to avoid, decrease or conceal an obligation to pay money to the federal government, or knowingly concealing or knowingly and improperly avoiding or decreasing an obligation to pay money to the federal government;
- *HIPAA* - the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created additional federal criminal statutes that prohibit, among other things, executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters, and apply regardless of the payor (e.g., public or private);
- *HIPAA and HITECH* - HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and their implementing regulations, which impose obligations on HIPAA covered entities and their business associates, including mandatory contractual terms and required implementation of administrative, physical and technical safeguards to maintain the privacy and security of individually identifiable health information;
- *Transparency Requirements* - the federal physician transparency requirements known as the Physician Payments Sunshine Act, under the Patient Protection and Affordable Care Act, as amended by the Health Care Education Reconciliation Act, or the Affordable Care Act, which requires manufacturers of drugs, medical devices, biological and medical supplies covered by Medicare, Medicaid, or State Children's Health Insurance Program to report annually to the Centers for Medicare & Medicaid Services, or CMS, within the United States Department of Health and Human Services, information related to payments and other transfers of value made by that entity to physicians, other healthcare providers and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members; and
- *Analogous State, Local and Foreign Laws* - analogous state, local and foreign fraud and abuse laws and regulations, such as state anti-kickback and false claims laws, which may be broader than similar federal laws, can apply to claims involving healthcare items or services regardless of payor, and are enforced by many different federal and state agencies as well as through private actions.

Some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government and require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures. State and foreign laws also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not pre-empted by HIPAA, thus complicating compliance efforts.

Efforts to ensure that Carisma's business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that Carisma's business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If Carisma's operations are found to be in violation of any of these laws or any other governmental regulations that may apply to Carisma, it may be subject to significant civil, criminal and/or administrative penalties, damages, fines, individual imprisonment, disgorgement, exclusion from government funded healthcare programs, such as Medicare and Medicaid, contractual damages, reputational harm, administrative burdens, diminished profits and future earnings, additional reporting obligations and oversight if Carisma becomes subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws and the curtailment or restructuring of its operations. If any of the physicians or other healthcare providers or entities with whom Carisma expects to do business is found to be not in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

The provision of benefits or advantages to physicians to induce or encourage the prescription, recommendation, endorsement, purchase, supply, order or use of medicinal products is also prohibited in the European Union. The provision of benefits or advantages to physicians is governed by the national anti-bribery laws of European Union Member States.

Compliance with global privacy and data security requirements could result in additional costs and liabilities to Carisma or inhibit its ability to collect and process data globally, and the failure to comply with such requirements could subject Carisma to significant fines and penalties, which may have a material adverse effect on its business, financial condition or results of operations.

The regulatory framework for the collection, use, safeguarding, sharing, transfer and other processing of information worldwide is rapidly evolving and is likely to remain uncertain for the foreseeable future. Globally, virtually every jurisdiction in which Carisma operates has established its own data security and privacy frameworks with which it must comply. For example, the collection, use, disclosure, transfer, or other processing of personal data regarding individuals in the European Union, including personal health data, is subject to the E.U. General Data Protection Regulation, or the GDPR, which took effect across all member states of the European Economic Area, or EEA, in May 2018. The GDPR is wide-ranging in scope and imposes numerous requirements on companies that process personal data, including requirements relating to processing health and other sensitive data, obtaining consent of the individuals to whom the personal data relates, providing information to individuals regarding data processing activities, implementing safeguards to protect the security and confidentiality of personal data, providing notification of data breaches, and taking certain measures when engaging third-party processors. The GDPR increases Carisma's obligations with respect to clinical trials conducted in the EEA by expanding the definition of personal data to include coded data and requiring changes to informed consent practices and more detailed notices for clinical trial subjects and investigators. In addition, the GDPR also imposes strict rules on the transfer of personal data to countries outside the European Union, including the United States and, as a result, increases the scrutiny that clinical trial sites located in the EEA should apply to transfers of personal data from such sites to countries that are considered to lack an adequate level of data protection, such as the United States. The GDPR also permits data protection authorities to require destruction of improperly gathered or used personal information and/or impose substantial fines for violations of the GDPR, which can be up to four percent of global revenues or 20.0 million Euros, whichever is greater, and it also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. In addition, the GDPR provides that European Union member states may make their own further laws and regulations limiting the processing of personal data, including genetic, biometric or health data.

Similar actions are either in place or under way in the United States. There are a broad variety of data protection laws that are applicable to Carisma's activities, and a wide range of enforcement agencies at both the state and federal levels that can review companies for privacy and data security concerns based on general consumer protection laws. The Federal Trade Commission and state Attorneys General all are aggressive in reviewing privacy and data security protections for consumers. New laws also are being considered at both the state and federal levels. For example, the California Consumer Privacy Act, or CCPA, which went into effect on January 1, 2020, is creating similar risks and obligations as those created by the GDPR, though CCPA does exempt certain information collected as part of a clinical trial subject to the Federal Policy for the Protection of Human Subjects (the Common Rule).

In November 2020, California voters passed a ballot initiative for the California Privacy Rights Act, or the CPRA, which went into effect on January 1, 2023, and significantly expanded the CCPA to incorporate additional GDPR-like provisions including requiring that the use, retention, and sharing of personal information of California residents be reasonably necessary and proportionate to the purposes of collection or processing, granting additional protections for sensitive personal information, and requiring greater disclosures related to notice to residents regarding retention of information. The CPRA also created a new enforcement agency - the California Privacy Protection Agency - whose sole responsibility is to enforce the CPRA, which will further increase compliance risk. The provisions in the CPRA may apply to some of Carisma's business activities. In addition, other states, including Virginia, Colorado, Utah, and Connecticut, already have passed state privacy laws. Virginia's privacy law also went into effect on January 1, 2023, and the laws in the other three states will go into effect later in the year. Other states will be considering these laws in the future, and Congress has also been debating passing a federal privacy law. These laws may impact Carisma's business activities, including its identification of research subjects, relationships with business partners and ultimately the marketing and distribution of Carisma's products.

Given the breadth and depth of changes in data protection obligations, preparing for and complying with such requirements is rigorous and time intensive and requires significant resources and a review of Carisma's technologies, systems and practices, as well as those of any third-party collaborators, service providers, contractors or consultants that process or transfer personal data. The GDPR and other changes in laws or regulations associated with the enhanced protection of certain types of sensitive data, such as healthcare data or other personal information from Carisma's clinical trials, could require Carisma to change its business practices and put in place additional compliance mechanisms, may interrupt or delay its development, regulatory and commercialization activities and increase its cost of doing business, and could lead to government enforcement actions, private litigation and significant fines and penalties against Carisma and could have a material adverse effect on its business, financial condition or results of operations. Similarly, failure to comply with federal and state laws regarding privacy and security of personal information could expose Carisma to fines and penalties under such laws. Even if Carisma is not determined to have violated these laws, government investigations into these issues typically require the expenditure of significant resources and generate negative publicity, which could harm Carisma's reputation and business.

Current and future legislation may increase the difficulty and cost for Carisma and any collaborators to obtain marketing approval of and commercialize product candidates and affect the prices Carisma, or any collaborators, may obtain.

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could, among other things, prevent or delay marketing approval of Carisma's product candidates, restrict or regulate post-approval activities, impact pricing and reimbursement and affect Carisma's ability, or the ability of any collaborators, to profitably sell or commercialize any product candidates for which Carisma, or any collaborators, obtain marketing approval. The pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by legislative initiatives. In particular, there have been and continue to be a number of initiatives at the U.S. federal and state levels that seek to reduce healthcare costs and improve the quality of healthcare. Current laws, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that Carisma, or any collaborators, may receive for any FDA approved products.

In the United States, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or the MMA, changed the way Medicare covers and pays for pharmaceutical products. The legislation expanded Medicare coverage for prescription drugs purchased through a pharmacy by the elderly and disabled and introduced a new reimbursement methodology based on average sales prices for physician-administered drugs. In addition, this statute provides authority for limiting the number of drugs that will be covered in any therapeutic class, subject to certain exceptions. Cost reduction initiatives and other provisions of this statute could decrease the coverage and price that Carisma receives for any approved products. While the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates. Therefore, any reduction in reimbursement that results from the MMA may result in a similar reduction in payments from private payors.

In March 2010, then-President Obama signed into law the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively the ACA. In addition, other legislative changes have been proposed and adopted since the ACA was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. These changes included aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, which went into effect in April 2013 and will remain in effect through 2031 under the Coronavirus Aid, Relief, and Economic Security Act, or the CARES Act. The American Taxpayer Relief Act of 2012, among other things, reduced Medicare payments to several providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. Under current legislation, the actual reductions in Medicare payments may vary up to 4%. Further, with passage of the Inflation Reduction Act, or IRA, in August 2022, Congress extended the expansion of the Patient Protection and Affordable Care Act premium tax credits through 2025. Those subsidies were originally extended through 2022 under the American Rescue Plan Act of 2021. These laws may result in additional reductions in Medicare and other healthcare funding and otherwise affect the prices Carisma may obtain for any of its product candidates for which it may obtain regulatory approval or the frequency with which any such product candidate is prescribed or used.

Since enactment of the ACA, there have been and continue to be, numerous legal challenges and Congressional actions to repeal and replace provisions of the law. For example, with enactment of the Tax Cuts for Jobs Act, or TCJA, in 2017, Congress repealed the "individual mandate." The repeal of this provision, which requires most Americans to carry a minimal level of health insurance, became effective in 2019. Further, on December 14, 2018, a U.S. District Court judge in the Northern District of Texas ruled that the individual mandate portion of the ACA is an essential and inseverable feature of the ACA and therefore because the mandate was repealed as part of the TCJA, the remaining provisions of the ACA are invalid as well. The U.S. Supreme Court heard this case on November 10, 2020 and on June 17, 2021, dismissed this action after finding that the plaintiffs do not have standing to challenge the constitutionality of the ACA. Litigation and legislation over the ACA are likely to continue, with unpredictable and uncertain results.

The Trump Administration also took executive actions to undermine or delay implementation of the ACA, including directing federal agencies with authorities and responsibilities under the ACA to waive, defer, grant exemptions from, or delay the implementation of any provision of the ACA that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. On January 28, 2021, however, President Biden rescinded those orders and issued a new Executive Order which directs federal agencies to reconsider rules and other policies that limit Americans' access to health care, and consider actions that will protect and strengthen that access. Under this Order, federal agencies are directed to re-examine: policies that undermine protections for people with pre-existing conditions, including complications related to COVID-19; demonstrations and waivers under Medicaid and the ACA that may reduce coverage or undermine the programs, including work requirements; policies that undermine the Health Insurance Marketplace or other markets for health insurance; policies that make it more difficult to enroll in Medicaid and the ACA; and policies that reduce affordability of coverage or financial assistance, including for dependents. This Executive Order also directs the U.S. Department of Health and Human Services to create a special enrollment period for the Health Insurance Marketplace in response to the COVID-19 pandemic.

Carisma expects that these healthcare reforms, as well as other healthcare reform measures that may be adopted in the future, may result in additional reductions in Medicare and other healthcare funding, more rigorous coverage criteria, new payment methodologies and additional downward pressure on the price that Carisma receives for any approved product and/or the level of reimbursement physicians receive for administering any approved product it might bring to market. Reductions in reimbursement levels may negatively impact the prices Carisma receives or the frequency with which its products are prescribed or administered. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. Accordingly, such reforms, if enacted, could have an adverse effect on anticipated revenue from product candidates that Carisma may successfully develop and for which it may obtain marketing approval and may affect Carisma's overall financial condition and ability to develop or commercialize product candidates.

The prices of prescription pharmaceuticals in the United States and foreign jurisdictions are subject to considerable legislative and executive actions and could impact the prices Carisma obtains for its drug products, if and when approved.

The prices of prescription pharmaceuticals have also been the subject of considerable discussion in the United States. There have been several recent U.S. congressional inquiries, as well as proposed and enacted state and federal legislation designed to, among other things, bring more transparency to pharmaceutical pricing, review the relationship between pricing and manufacturer patient programs, and reduce the costs of pharmaceuticals under Medicare and Medicaid. In 2020, President Trump issued several executive orders intended to lower the costs of prescription products and certain provisions in these orders have been incorporated into regulations. These regulations include an interim final rule implementing a most favored nation model for prices that would tie Medicare Part B payments for certain physician-administered pharmaceuticals to the lowest price paid in other economically advanced countries, effective January 1, 2021. That rule, however, has been subject to a nationwide preliminary injunction and, on December 29, 2021, CMS issued a final rule to rescind it. With issuance of this rule, CMS stated that it will explore all options to incorporate value into payments for Medicare Part B pharmaceuticals and improve beneficiaries' access to evidence-based care.

In addition, in October 2020, the Department of Health and Human Services, or HHS, and the FDA published a final rule allowing states and other entities to develop a Section 804 Importation Program, or SIP, to import certain prescription drugs from Canada into the United States. The final rule is currently the subject of ongoing litigation, but at least six states (Vermont, Colorado, Florida, Maine, New Mexico, and New Hampshire) have passed laws allowing for the importation of drugs from Canada with the intent of developing SIPs for review and approval by the FDA. Further, on November 20, 2020, HHS finalized a regulation removing safe harbor protection for price reductions from pharmaceutical manufacturers to plan sponsors under Part D, either directly or through pharmacy benefit managers, unless the price reduction is required by law. The final rule would eliminate the current safe harbor for Medicare drug rebates and create new safe harbors for beneficiary point-of-sale discounts and pharmacy benefit manager service fees. It originally was set to go into effect on January 1, 2022, but with passage of the IRA has been delayed by Congress to January 1, 2032.

More recently, on August 16, 2022, the IRA was signed into law by President Biden. The new legislation has implications for Medicare Part D, which is a program available to individuals who are entitled to Medicare Part A or enrolled in Medicare Part B to give them the option of paying a monthly premium for outpatient prescription drug coverage. Among other things, the IRA requires manufacturers of certain drugs to engage in price negotiations with Medicare (beginning in 2026), with prices that can be negotiated subject to a cap; imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation (first due in 2023); and replaces the Part D coverage gap discount program with a new discounting program (beginning in 2025). The IRA permits the Secretary of the Department of HHS to implement many of these provisions through guidance, as opposed to regulation, for the initial years.

Specifically, with respect to price negotiations, Congress authorized Medicare to negotiate lower prices for certain costly single-source drug and biologic products that do not have competing generics or biosimilars and are reimbursed under Medicare Part B and Part D. CMS may negotiate prices for ten high-cost drugs paid for by Medicare Part D starting in 2026, followed by 15 Part D drugs in 2027, 15 Part B or Part D drugs in 2028, and 20 Part B or Part D drugs in 2029 and beyond. This provision applies to drug products that have been approved for at least 9 years and biologics that have been licensed for 13 years, but it does not apply to drugs and biologics that have been approved for a single rare disease or condition. Nonetheless, since CMS may establish a maximum price for these products in price negotiations, Carisma would be fully at risk of government action if its products are the subject of Medicare price negotiations. Moreover, given the risk that could be the case, these provisions of the IRA may also further heighten the risk that Carisma would not be able to achieve the expected return on its drug products or full value of its patents protecting its products if prices are set after such products have been on the market for nine years.

Further, the legislation subjects drug manufacturers to civil monetary penalties and a potential excise tax for failing to comply with the legislation by offering a price that is not equal to or less than the negotiated "maximum fair price" under the law or for taking price increases that exceed inflation. The legislation also requires manufacturers to pay rebates for drugs in Medicare Part D whose price increases exceed inflation. The new law also caps Medicare out-of-pocket drug costs at an estimated $4,000 a year in 2024 and, thereafter beginning in 2025, at 2,000 a year. In addition, the IRA potentially raises legal risks with respect to individuals participating in a Medicare Part D prescription drug plan who may experience a gap in coverage if they required coverage above their initial annual coverage limit before they reached the higher threshold, or "catastrophic period" of the plan. Individuals requiring services exceeding the initial annual coverage limit and below the catastrophic period, must pay 100% of the cost of their prescriptions until they reach the catastrophic period. Among other things, the IRA contains many provisions aimed at reducing this financial burden on individuals by reducing the co-insurance and co-payment costs, expanding eligibility for lower income subsidy plans, and price caps on annual out-of-pocket expenses, each of which could have potential pricing and reporting implications.

Accordingly, while it is currently unclear how the IRA will be effectuated, Carisma cannot predict with certainty what impact any federal or state health reforms will have on it, but such changes could impose new or more stringent regulatory requirements on Carisma's activities or result in reduced reimbursement for its products, any of which could adversely affect Carisma's business, results of operations and financial condition.

At the state level, individual states are increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. In addition, health care organizations and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other health care programs. These measures could reduce the ultimate demand for Carisma's products, once approved, or put pressure on its product pricing. Carisma expects that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for its product candidates or additional pricing pressures.

In other countries, particularly the countries of the European Union, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a drug. To obtain reimbursement or pricing approval in some countries, Carisma, or its collaborators, may be required to conduct a clinical trial that compares the cost-effectiveness of its drug to other available therapies. If reimbursement of Carisma's drugs is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, its business could be materially harmed.

Carisma is subject to anti-corruption laws, as well as export control laws, customs laws, sanctions laws and other laws governing its operations. If Carisma fails to comply with these laws, it could be subject to civil or criminal penalties, other remedial measures and legal expenses, which could adversely affect its business, results of operations and financial condition.

Carisma's operations are subject to anti-corruption laws, including the Foreign Corrupt Practices Act, or, FCPA, the Bribery Act, and other anticorruption laws that apply in countries where Carisma does business and may do business in the future. The FCPA, the Bribery Act, and these other laws generally prohibit Carisma, its officers and its employees and intermediaries from bribing, being bribed or making other prohibited payments to government officials or other persons to obtain or retain business or gain some other business advantage. Carisma may in the future operate in jurisdictions that pose a high risk of potential FCPA or Bribery Act violations, and it may participate in collaborations and relationships with third parties whose actions could potentially subject Carisma to liability under the FCPA, the Bribery Act, or local anti-corruption laws. In addition, Carisma cannot predict the nature, scope or effect of future regulatory requirements to which its international operations might be subject or the manner in which existing laws might be administered or interpreted.

Carisma is also subject to other laws and regulations governing its international operations, including regulations administered by the governments of the United States, United Kingdom, and authorities in the European Union, including applicable export control regulations, economic sanctions on countries and persons, customs requirements and currency exchange regulations, which is collectively referred to as Trade Control Laws.

There is no assurance that Carisma will be completely effective in ensuring its compliance with all applicable anti-corruption laws, including the FCPA, the Bribery Act, or other legal requirements, including Trade Control Laws. If Carisma is not in compliance with the FCPA, the Bribery Act, and other anti-corruption laws or Trade Control Laws, it may be subject to criminal and civil penalties, disgorgement and other sanctions and remedial measures, and legal expenses, which could have an adverse impact on its business, financial condition, results of operations and liquidity. The SEC also may suspend or bar issuers from trading securities on U.S. exchanges for violations of the FCPA's accounting provisions. Likewise, any investigation of any potential violations of the FCPA, the Bribery Act, other anti-corruption laws or Trade Control Laws by the United States, the United Kingdom or other authorities could also have an adverse impact on Carisma's reputation, business, results of operations and financial condition.

Carisma is subject to stringent privacy laws, information security laws, regulations, policies and contractual obligations related to data privacy and security and changes in such laws, regulations, policies, contractual obligations and failure to comply with such requirements could subject Carisma to significant fines and penalties, which may have a material adverse effect on Carisma's business, financial condition or results of operations.

Carisma is subject to data privacy and protection laws and regulations that apply to the collection, transmission, storage and use of personally-identifying information, which among other things, impose certain requirements relating to the privacy, security and transmission of personal information, including comprehensive regulatory systems in the United States, the European Union and the United Kingdom. The legislative and regulatory landscape for privacy and data protection continues to evolve in jurisdictions worldwide, and there has been an increasing focus on privacy and data protection issues with the potential to affect Carisma's business. Failure to comply with any of these laws and regulations could result in an enforcement action against Carisma, including fines, imprisonment of company officials and public censure, claims for damages by affected individuals, damage to Carisma's reputation and loss of goodwill, any of which could have a material adverse effect on Carisma's business, financial condition, results of operations or prospects.

There are numerous U.S. federal and state laws and regulations related to the privacy and security of personal information. In particular, regulations promulgated pursuant to HIPAA establish privacy and security standards that limit the use and disclosure of individually identifiable health information, or protected health information, and require the implementation of administrative, physical and technological safeguards to protect the privacy of protected health information and ensure the confidentiality, integrity and availability of electronic protected health information. Determining whether protected health information has been handled in compliance with applicable privacy standards and Carisma's contractual obligations can be complex and may be subject to changing interpretation. These obligations may be applicable to some or all of Carisma's business activities now or in the future.

If Carisma is unable to properly protect the privacy and security of protected health information, it could be found to have breached its contracts. Further, if Carisma fails to comply with applicable privacy laws, including applicable HIPAA privacy and security standards, it could face civil and criminal penalties. HHS enforcement activity can result in financial liability and reputational harm, and responses to such enforcement activity can consume significant internal resources. In addition, state attorneys general are authorized to bring civil actions seeking either injunctions or damages in response to violations that threaten the privacy of state residents. Carisma cannot be sure how these regulations will be interpreted, enforced or applied to its operations. In addition to the risks associated with enforcement activities and potential contractual liabilities, Carisma's ongoing efforts to comply with evolving laws and regulations at the federal and state level may be costly and require ongoing modifications to its policies, procedures and systems.

In 2018, California passed into law the California Consumer Privacy Act, or the CCPA, which took effect on January 1, 2020 and imposed many requirements on businesses that process the personal information of California residents. Many of the CCPA's requirements are similar to those found in the General Data Protection Regulation, or the GDPR, including requiring businesses to provide notice to data subjects regarding the information collected about them and how such information is used and shared, and providing data subjects the right to request access to such personal information and, in certain cases, request the erasure of such personal information. The CCPA also affords California residents the right to opt-out of "sales" of their personal information. The CCPA contains significant penalties for companies that violate its requirements. In November 2020, California voters passed a ballot initiative for the California Privacy Rights Act, or the CPRA, which will significantly expand the CCPA to incorporate additional GDPR-like provisions including requiring that the use, retention, and sharing of personal information of California residents be reasonably necessary and proportionate to the purposes of collection or processing, granting additional protections for sensitive personal information, and requiring greater disclosures related to notice to residents regarding retention of information. Most CPRA provisions took effect on January 1, 2023, though the obligations apply to any personal information collected after January 1, 2022. These provisions may apply to some of Carisma's business activities. In addition, other states, including Virginia and Colorado, already have passed state privacy laws. Other states will be considering these laws in the future. These laws may impact Carisma's business activities, including Carisma's identification of research subjects, relationships with business partners and ultimately the marketing and distribution of its products.

Similar to the laws in the United States, there are significant privacy and data security laws that apply in Europe and other countries. The collection, use, disclosure, transfer, or other processing of personal data, including personal health data, regarding individuals who are located in the European Economic Area, or EEA, and the processing of personal data that takes place in the EEA, is regulated by the GDPR, which went into effect in May 2018 and which imposes obligations on companies that operate in Carisma's industry with respect to the processing of personal data and the cross-border transfer of such data. The GDPR imposes onerous accountability obligations requiring data controllers and processors to maintain a record of their data processing and policies. If Carisma's or its partners' or service providers' privacy or data security measures fail to comply with the GDPR requirements, Carisma may be subject to litigation, regulatory investigations, enforcement notices requiring it to change the way it uses personal data and/or fines of up to 20.0 million Euros or up to 4% of the total worldwide annual turnover of the preceding financial year, whichever is higher, as well as compensation claims by affected individuals, negative publicity, reputational harm and a potential loss of business and goodwill.

The GDPR places restrictions on the cross-border transfer of personal data from the European Union to countries that have not been found by the European Commission to offer adequate data protection legislation, such as the United States. There are ongoing concerns about the ability of companies to transfer personal data from the European Union to other countries. In July 2020, the Court of Justice of the European Union, or the CJEU invalidated the European Union-United States Privacy Shield, one of the mechanisms used to legitimize the transfer of personal data from the EEA to the United States. The CJEU decision also drew into question the long-term viability of an alternative means of data transfer, the standard contractual clauses, for transfers of personal data from the EEA to the United States. While Carisma is not self-certified under the Privacy Shield, this CJEU decision may lead to increased scrutiny on data transfers from the EEA to the United States, generally, and increase Carisma's costs of compliance with data privacy legislation as well as its costs of negotiating appropriate privacy and security agreements with its vendors and business partners.

Following the withdrawal of the United Kingdom from the European Union, the UK Data Protection Act 2018 applies to the processing of personal data that takes place in the United Kingdom and includes parallel obligations to those set forth by GDPR. As with other issues related to Brexit, there are open questions about how personal data will be protected in the United Kingdom and whether personal information can transfer from the European Union to the United Kingdom. Following the withdrawal of the United Kingdom from the European Union, the UK Data Protection Act 2018 applies to the processing of personal data that takes place in the United Kingdom and includes parallel obligations to those set forth by GDPR. While the Data Protection Act of 2018 in the United Kingdom that "implements" and complements the GDPR, has achieved Royal Assent on May 23, 2018 and is now effective in the United Kingdom, it is still unclear whether transfer of data from the EEA to the United Kingdom will remain lawful under GDPR. The U.K. government has already determined that it considers all European Union and EEA member states to be adequate for the purposes of data protection, ensuring that data flows from the United Kingdom to the European Union/EEA remain unaffected. In addition, a recent decision from the EC appears to deem the United Kingdom as being "essentially adequate" for purposes of data transfer from the European Union to the United Kingdom, although this decision may be re-evaluated in the future.

Beyond GDPR, there are privacy and data security laws in a growing number of countries around the world. While many loosely follow GDPR as a model, other laws contain different or conflicting provisions. These laws will impact Carisma's ability to conduct its business activities, including both its clinical trials and any eventual sale and distribution of commercial products, through increased compliance costs, costs associated with contracting and potential enforcement actions.

While Carisma continues to address the implications of the recent changes to data privacy regulations, data privacy remains an evolving landscape at both the domestic and international level, with new regulations coming into effect and continued legal challenges, and Carisma's efforts to comply with the evolving data protection rules may be unsuccessful. It is possible that these laws may be interpreted and applied in a manner that is inconsistent with Carisma's practices. Carisma must devote significant resources to understanding and complying with this changing landscape. Failure to comply with laws regarding data protection would expose Carisma to risk of enforcement actions taken by data protection authorities in the EEA and elsewhere and carries with it the potential for significant penalties if Carisma is found to be non-compliant. Similarly, failure to comply with federal and state laws in the United States regarding privacy and security of personal information could expose Carisma to penalties under such laws. Any such failure to comply with data protection and privacy laws could result in government-imposed fines or orders requiring that Carisma change its practices, claims for damages or other liabilities, regulatory investigations and enforcement action, litigation and significant costs for remediation, any of which could adversely affect Carisma's business. Even if Carisma is not determined to have violated these laws, government investigations into these issues typically require the expenditure of significant resources and generate negative publicity, which could harm Carisma's business, financial condition, results of operations or prospects.

If Carisma employees, independent contractors, consultants, collaborators and vendors engage in misconduct or other improper activities, including non-compliance with regulatory standards and/or requirements and insider trading, Carisma could sustain significant liability and harm to its reputation.

Carisma is exposed to the risk of fraud or other misconduct by its employees, independent contractors, consultants, collaborators and vendors. Misconduct by these partners could include intentional failures to comply with FDA regulations or similar regulations of comparable foreign regulatory authorities, provide accurate information to the FDA or comparable foreign regulatory authorities, comply with manufacturing standards, comply with federal and state healthcare fraud and abuse laws and regulations and similar laws and regulations established and enforced by comparable foreign regulatory authorities, report financial information or data accurately or disclose unauthorized activities to Carisma. Employee misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to Carisma's reputation. This could include violations of HIPAA, other U.S. federal and state laws, and requirements of foreign jurisdictions, including the GDPR. Carisma is also exposed to risks in connection with any insider trading violations by employees or others affiliated with Carisma. It is not always possible to identify and deter employee or third-party misconduct, and the precautions that Carisma takes to detect and prevent these activities may not be effective in controlling unknown or unmanaged risks or losses or in protecting Carisma from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws, standards, regulations, guidance or codes of conduct. If any such actions are instituted against Carisma, and Carisma is not successful in defending itself or asserting its rights, those actions could have a significant impact on its business and results of operations, including the imposition of significant fines or other sanctions.

If Carisma or any third-party manufacturer it engages now or in the future fails to comply with environmental, health and safety laws and regulations, Carisma could become subject to fines or penalties or incur costs or liabilities that could significantly harm its business.

Carisma and third-party manufacturers it engages now are, and any third-party manufacturer it may engage in the future will be, subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. From time to time and in the future, Carisma's operations may involve the use of hazardous and flammable materials, including chemicals and biological materials, and may also produce hazardous waste products. Although Carisma contracts with third parties for the disposal of these materials and waste products, it cannot completely eliminate the risk of contamination or injury resulting from these materials. In the event of contamination or injury resulting from the use or disposal of Carisma's hazardous materials, Carisma could be held liable for any resulting damages, and any liability could exceed its resources. Carisma also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

Carisma maintains general liability insurance as well as workers' compensation insurance to cover costs and expenses it may incur due to injuries to its employees resulting from the use of hazardous materials, but this insurance may not provide adequate coverage against potential liabilities. Carisma does not maintain insurance for environmental liability or toxic tort claims that may be asserted against it. In addition, Carisma may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. Current or future environmental laws and regulations may impair Carisma's research, development or production efforts, which could adversely affect its business, financial condition, results of operations or prospects. In addition, failure to comply with these laws and regulations may result in substantial fines, penalties or other sanctions.

Risks Related to Employee Matters and Managing Growth

Carisma's future success depends on its ability to retain key executives and experienced scientists and to attract, retain and motivate qualified personnel.

Carisma is highly dependent on the research and development, clinical, financial, operational and other business expertise of its executive officers, as well as the other principal members of its management, scientific and clinical teams. Although Carisma has entered into employment agreements with certain of its executive officers, each of them may terminate their employment with Carisma at any time. Carisma does not maintain "key person" insurance for any of its executives or other employees. Recruiting and retaining qualified scientific, clinical, manufacturing, accounting, legal and sales and marketing personnel will also be critical to Carisma's success.

The loss of the services of Carisma's executive officers or other key employees, including temporary loss due to illness, could impede the achievement of its discovery programs, development and commercialization objectives and seriously harm its ability to successfully implement its business strategy. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited number of individuals in Carisma's industry with the breadth of skills and experience required to successfully develop, gain marketing approval of and commercialize products. Competition to hire from this limited pool is intense, and Carisma may be unable to hire, train, retain or motivate these key personnel on acceptable terms given the competition among numerous biopharmaceutical companies for similar personnel. Carisma also experiences competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, Carisma relies on consultants and advisors, including scientific and clinical advisors, to assist it in formulating its discovery, research and development and commercialization strategy. Carisma's consultants and advisors may be employed by employers other than Carisma and may have commitments under consulting or advisory contracts with other entities that may limit their availability to Carisma. Failure to succeed in clinical trials may make it even more challenging to recruit and retain qualified scientific personnel. Carisma's success as a public company also depends on implementing and maintaining internal controls and the accuracy and timeliness of its financial reporting. If Carisma is unable to continue to attract and retain high quality personnel, its ability to pursue its growth strategy will be limited.

Carisma expects to expand its development and regulatory capabilities and potentially implement sales, marketing and distribution capabilities, and as a result, it may encounter difficulties in managing its growth, which could disrupt its operations.

Carisma expects to experience significant growth in the number of its employees and the scope of its operations, particularly as it functions as a public company and in the areas of product development, clinical, regulatory affairs, manufacturing and quality control and, if any of its product candidates receives marketing approval, sales, marketing and distribution. To manage Carisma's anticipated future growth, it must continue to implement and improve its managerial, operational and financial systems, expand its facilities and continue to recruit and train additional qualified personnel. Future growth will impose significant added responsibilities on members of management, including:

- identifying, recruiting, integrating, maintaining and motivating additional employees;
- managing its internal development efforts effectively, including the clinical and regulatory review process for CT-0508 and other product candidates Carisma is developing or may develop in the future, while complying with its contractual obligations to contractors and other third parties; and
- improving its operational, financial and management controls, reporting systems and procedures.

Carisma's future financial performance and its ability to advance development of and, if approved, commercialize CT-0508 and any other product candidate Carisma is developing or may develop in the future will depend, in part, on Carisma's ability to effectively manage any future growth. Due to Carisma's limited financial resources and the limited experience of its management team in managing a company with such anticipated growth, Carisma may not be able to effectively manage the expansion of its operations or recruit and train additional qualified personnel. If Carisma does not effectively manage the expansion of its operations, Carisma could experience weaknesses in its infrastructure, operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. The expansion of Carisma's operations also could lead to significant costs and may divert Carisma's management and business development resources. Any inability to manage growth could delay the execution of Carisma's business plans or disrupt its operations.

Many of the biopharmaceutical companies, and in particular cell therapy companies, that Carisma competes against for qualified personnel and consultants have greater financial and other resources, different risk profiles and a longer history in the industry than Carisma does. They also may provide more diverse opportunities and better chances for career advancement. Some of these characteristics may be more appealing to high-quality candidates than what Carisma has to offer. If Carisma is unable to continue to attract and retain high-quality personnel and consultants, the rate and success at which Carisma can develop product candidates and operate its business will be limited.

Carisma's internal computer systems, or those of its collaborators, vendors, suppliers, contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of Carisma's product development programs.

Carisma's internal computer systems and those of any collaborators, vendors, suppliers, contractors or consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. Such systems are also vulnerable to service interruptions or to security breaches from inadvertent or intentional actions by Carisma's employees, third-party vendors and/or business partners, or from cyber-attacks by malicious third parties. Cyber-attacks are increasing in their frequency, sophistication and intensity, and have become increasingly difficult to detect. Cyber-attacks could include the deployment of harmful malware, ransomware, denial-of-service attacks, unauthorized access to or deletion of files, social engineering and other means to affect service reliability and threaten the confidentiality, integrity and availability of information. Cyber-attacks also could include phishing attempts or email fraud to cause payments or information to be transmitted to an unintended recipient.

If Carisma experiences any material system failure, accident, cyber-attack or security that causes interruptions in its operations, it could result in a material disruption of Carisma's development programs and its business operations, whether due to a loss of its trade secrets or other proprietary information or other similar disruptions. For example, the loss of clinical trial data from completed or future clinical trials could result in delays in Carisma's marketing approval efforts and significantly increase its costs to recover or reproduce the data. To the extent that any disruption or security breach were to result in a loss of, or damage to, Carisma's data or applications, or inappropriate disclosure of confidential or proprietary information, Carisma could incur liability, its competitive position could be harmed and the further development and commercialization of its product candidates could be delayed.

Carisma's employees, independent contractors, including principal investigators, consultants and vendors and any third parties it may engage in connection with discovery programs, research, development, regulatory, manufacturing, quality assurance and other pharmaceutical functions and commercialization may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading, which could cause significant liability for Carisma and harm its reputation.

Carisma is exposed to the risk of fraud or other misconduct by its employees, independent contractors, including principal investigators, consultants and vendors and any other third parties it engages. Misconduct by these parties could include intentional, reckless or negligent conduct or unauthorized activities that include failures to comply with FDA regulations or similar regulations of comparable foreign regulatory authorities, provide complete and accurate information to the FDA or comparable foreign regulatory authorities, comply with manufacturing standards, comply with federal and state data privacy, security, fraud and other healthcare fraud and abuse laws and regulations and similar laws and regulations established and enforced by comparable foreign regulatory authorities, report complete financial information or data accurately or disclose unauthorized activities to Carisma. Misconduct by employees and other third parties could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to Carisma's reputation. This could include violations of HIPAA, other U.S. federal and state law, and requirements of non-U.S. jurisdictions, including the European Union Data Protection Directive. Carisma is also exposed to risks in connection with any insider trading violations by employees or others affiliated with Carisma. It is not always possible to identify and deter misconduct by employees and other third parties, and the precautions Carisma takes to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting Carisma from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws, standards, regulations, guidance or codes of conduct. Additionally, Carisma is subject to the risk that a person could allege such fraud or other misconduct, even if none occurred. If any such actions are instituted against Carisma, and it is not successful in defending itself or asserting its rights, those actions could have a significant impact on Carisma's business and results of operations, including the imposition of significant civil, criminal and administrative penalties, damages, monetary fines, disgorgements, possible exclusion from participation in Medicare, Medicaid, other U.S. federal healthcare programs or healthcare programs in other jurisdictions, integrity oversight and reporting obligations to resolve allegations of non-compliance, individual imprisonment, other sanctions, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of Carisma's operations.

Risks Related to the Ownership of Carisma's Common Stock

The market price of Carisma's common stock may be volatile, and the market price of Carisma's common stock may drop following the merger.

The market price of Carisma's common stock following the merger could be subject to significant fluctuations. Some of the factors that may cause the market price of Carisma's common stock to fluctuate include:

- results of clinical trials and pre-clinical studies of Carisma's product candidates, or those of Carisma's competitors or Carisma's existing or future collaborators;

- failure to meet or exceed financial and development projections Carisma may provide to the public;
- failure to meet or exceed the financial and development projections of the investment community;
- if Carisma does not achieve the perceived benefits of the merger as rapidly or to the extent anticipated by financial or industry analysts;
- announcements of significant acquisitions, strategic collaborations, joint ventures or capital commitments by Carisma or its competitors;
- actions taken by regulatory agencies with respect to Carisma's product candidates, clinical studies, manufacturing process or sales and marketing terms;
- disputes or other developments relating to proprietary rights, including patents, litigation matters, and Carisma's ability to obtain patent protection for its technologies;
- additions or departures of qualified scientific and management personnel;
- significant lawsuits, including patent or stockholder litigation;
- if securities or industry analysts do not publish research or reports about Carisma's business, or if they issue adverse or misleading opinions regarding its business and stock;
- changes in the market valuations of similar companies;
- general market or macroeconomic conditions or market conditions in the biopharmaceutical sector;
- sales of securities by Carisma or its stockholders in the future;
- if Carisma fails to raise an adequate amount of capital to fund its operations and continued development of its product candidates;
- trading volume of Carisma's common stock;
- announcements by competitors of new commercial products, clinical progress or lack thereof, significant contracts, commercial relationships or capital commitments;
- adverse publicity relating to product candidates, including with respect to other products in such markets;
- the introduction of technological innovations or new therapies that compete with the products and services of Carisma; and
- period-to-period fluctuations in Carisma's financial results.

Moreover, the stock markets in general have experienced substantial volatility that has often been unrelated to the operating performance of individual companies. These broad market fluctuations may also adversely affect the trading price of Carisma's common stock. In addition, a recession, depression or other sustained adverse market event could materially and adversely affect Carisma's business and the value of its common stock. In the past, following periods of volatility in the market price of a company's securities, stockholders have often instituted class action securities litigation against such companies. Furthermore, market volatility may lead to increased shareholder activism if Carisma experiences a market valuation that activists believe is not reflective of its intrinsic value. Activist campaigns that contest or conflict with Carisma's strategic direction or seek changes in the composition of its board of directors could have an adverse effect on Carisma's operating results and financial condition.

Carisma will incur additional costs and increased demands upon management as a result of complying with the laws and regulations affecting public companies.

Carisma will incur significant legal, accounting and other expenses as a public company that Carisma did not incur as a private company, including costs associated with public company reporting obligations under the Exchange Act. Carisma's management team consists of the executive officers of Carisma prior to the merger, some of whom have not previously managed and operated a public company. These executive officers and other personnel will need to devote substantial time to gaining expertise related to public company reporting requirements and compliance with applicable laws and regulations to ensure that Carisma complies with all of these requirements. Any changes Carisma makes to comply with these obligations may not be sufficient to allow it to satisfy its obligations as a public company on a timely basis, or at all. These reporting requirements, rules and regulations, coupled with the increase in potential litigation exposure associated with being a public company, could also make it more difficult for Carisma to attract and retain qualified persons to serve on the board of directors or on board committees or to serve as executive officers, or to obtain certain types of insurance, including directors' and officers' insurance, on acceptable terms.

Once Carisma is no longer a "smaller reporting company" or otherwise no longer qualifies for applicable exemptions, Carisma will be subject to additional laws and regulations affecting public companies that will increase Carisma's costs and the demands on management and could harm Carisma's operating results.

Carisma will be subject to the reporting requirements of the Exchange Act, which requires, among other things, that Carisma file with the SEC annual, quarterly and current reports with respect to Carisma's business and financial condition as well as other disclosure and corporate governance requirements. However, as a "smaller reporting company," as defined in Item 10(f)(1) of Regulation S-K, Carisma may take advantage of certain exemptions from disclosure requirements, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2022 and reduced disclosure obligations regarding executive compensation in Carisma's periodic reports and proxy statements. Once Carisma no longer qualifies as a smaller reporting company or otherwise no longer qualifies for these exemptions, Carisma will be required to comply with these additional legal and regulatory requirements applicable to public companies and will incur significant legal, accounting and other expenses to do so. If Carisma is not able to comply with the requirements in a timely manner or at all, Carisma's financial condition or the market price of Carisma's common stock may be harmed. For example, if Carisma or its independent auditor identifies deficiencies in Carisma's internal control over financial reporting that are deemed to be material weaknesses, then Carisma could face additional costs to remedy those deficiencies, the market price of Carisma's stock could decline or Carisma could be subject to sanctions or investigations by the SEC or other regulatory authorities, which would require additional financial and management resources.

Provisions in Carisma's certificate of incorporation and bylaws and provisions under Delaware law could make an acquisition of Carisma, which may be beneficial to its stockholders, more difficult and may prevent attempts by its stockholders to replace or remove its management.

Provisions in Carisma's certificate of incorporation and bylaws may discourage, delay or prevent a merger, acquisition or other change in control of Carisma that stockholders may consider favorable, including transactions in which its common stockholders might otherwise receive a premium price for their shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of Carisma's common stock, thereby depressing the market price of its common stock. In addition, because Carisma's board of directors will be responsible for appointing the members of Carisma's management team, these provisions may frustrate or prevent any attempts by Carisma's stockholders to replace or remove its current management by making it more difficult for stockholders to replace members of Carisma's board of directors. Among other things, these provisions:

- establish a classified board of directors such that only one of three classes of directors is elected each year;
- allow the authorized number of Carisma's directors to be changed only by resolution of its board of directors;
- limit the manner in which stockholders can remove directors from Carisma's board of directors;
- establish advance notice requirements for stockholder proposals that can be acted on at stockholder meetings and for nominations to Carisma's board of directors;
- limit who may call stockholder meetings;
- prohibit actions by Carisma's stockholders by written consent;
- require that stockholder actions be effected at a duly called stockholders meeting;
- authorize Carisma's board of directors to issue preferred stock without stockholder approval, which could be used to institute a "poison pill" that would work to dilute the stock ownership of a potential hostile acquirer, effectively preventing acquisitions that have not been approved by Carisma's board of directors; and
- require the approval of the holders of at least 75% of the votes that all Carisma stockholders would be entitled to cast to amend or repeal certain provisions of Carisma's certificate of incorporation or bylaws.

Moreover, because Carisma is incorporated in Delaware, it is governed by the provisions of Section 203 of the Delaware General Corporation Law which prohibits a person who owns 15% or more of Carisma's outstanding voting stock from merging or combining with Carisma for a period of three years after the date of the transaction in which the person acquired 15% or more of Carisma's outstanding voting stock, unless the merger or combination is approved in a manner prescribed by the statute.

An active trading market for Carisma's common stock may not develop and its stockholders may not be able to resell their shares of common stock for a profit, if at all.

Prior to the merger, there had been no public market for shares of Carisma capital stock. An active trading market for Carisma's shares of common stock may never develop or be sustained. If an active market for the Carisma's common stock does not develop or is not sustained, it may be difficult for its stockholders to sell their shares at an attractive price or at all.

Carisma's executive officers, directors and principal stockholders may have the ability to control or significantly influence all matters submitted to Carisma's stockholders for approval.

Carisma's executive officers, directors and principal stockholders, in the aggregate, beneficially own approximately 53.95% of the Carisma's outstanding shares of common stock. As a result, if these stockholders were to choose to act together, they would be able to control or significantly influence all matters submitted to Carisma's stockholders for approval, as well as Carisma's management and affairs. For example, these persons, if they choose to act together, would control or significantly influence the election of directors and approval of any merger, consolidation or sale of all or substantially all of Carisma's assets. This concentration of voting power could delay or prevent an acquisition of Carisma on terms that other stockholders may desire.

If equity research analysts do not publish research or reports, or publish unfavorable research or reports, about Carisma, its business or its market, its stock price and trading volume could decline.

The trading market for Carisma's common stock will be influenced by the research and reports that equity research analysts publish about it and its business. Equity research analysts may elect not to provide research coverage of Carisma's common stock after the completion of the merger, and such lack of research coverage may adversely affect the market price of its common stock. In the event it does have equity research analyst coverage, Carisma will not have any control over the analysts or the content and opinions included in their reports. The price of Carisma's common stock could decline if one or more equity research analysts downgrade its stock or issue other unfavorable commentary or research. If one or more equity research analysts ceases coverage of Carisma or fails to publish reports on it regularly, demand for its common stock could decrease, which in turn could cause its stock price or trading volume to decline.

Carisma will have broad discretion in the use of the cash and cash equivalents of Carisma as well as the proceeds from the Carisma pre-closing financing and may invest or spend the proceeds in ways with which you do not agree and in ways that may not increase the value of your investment.

Carisma will have broad discretion over the use of the cash and cash equivalents of Carisma and the proceeds from the Carisma pre-closing financing, pursuant to which, immediately prior to the consummation of the merger, certain investors purchased shares of CTx common stock for an aggregate purchase price of approximately $30.6 million, which was converted into the right to receive a number of shares of Carisma common stock equal to the exchange ratio. You may not agree with Carisma's decisions, and its use of the proceeds may not yield any return on your investment. Carisma's failure to apply these resources effectively could compromise its ability to pursue its growth strategy and Carisma might not be able to yield a significant return, if any, on its investment of these net proceeds. You will not have the opportunity to influence Carisma's decisions on how to use its cash resources.

Carisma may be responsible for unwinding contractual relationships related to a strategic transaction with respect to Vicineum, which may adversely impact the business, financial condition and results of operations of Carisma.

On July 15, 2022, Sesen Bio made the strategic decision to voluntarily pause further development of Vicineum in the U.S. and Carisma does not expect to pursue further development of Vicineum for the treatment of non-muscle invasive bladder cancer. Sesen Bio previously entered into various agreements and licenses with licensees, licensors and other counterparties related to the development and/or commercialization of Vicineum. Prior to the consummation of the merger of Carisma and Sesen Bio, Sesen Bio began the process of winding down its operations relating to Vicineum. In connection with a strategic transaction with respect to Vicineum, Carisma may be responsible for unwinding contractual relationships related to Vicineum, which could divert the attention of the management teams and employees of Carisma from day-to-day business, result in liability, impose additional costs and otherwise adversely affect the business and financial condition of Carisma.