



Moderna and Carisma Establish Collaboration to Develop *in vivo* Engineered Chimeric Antigen Receptor Monocytes (CAR-M) for Oncology

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*Collaboration will combine Carisma's engineered macrophage technology with Moderna's mRNA and LNP technologies to generate and develop *in vivo* CAR-M therapeutics*

Multi-year research collaboration funded by Moderna with options for up to twelve targets

Carisma to receive \$45 million up-front cash payment and investment by Moderna in the form of a \$35 million convertible note

Carisma eligible to receive milestone and royalty payments

CAMBRIDGE, Mass. and PHILADELPHIA, Jan. 10, 2022 /PRNewswire/ -- Moderna Inc. (NASDAQ: [MRNA](#)), a biotechnology company pioneering messenger RNA (mRNA) therapeutics and vaccines, and Carisma Therapeutics Inc., a biopharmaceutical pioneer in engineered macrophage-based therapeutics, today announced that the two companies have entered into a strategic collaboration agreement to discover, develop and commercialize *in vivo* engineered chimeric antigen receptor monocyte (CAR-M) therapeutics for the treatment of cancer.

"We are excited to begin this collaboration with Carisma to further expand our oncology pipeline with a differentiated *in vivo* cell-therapy approach," said Stephen Hoge, President of Moderna. "This exemplifies our strategy to partner with companies with deep biological expertise while leveraging Moderna's core mRNA and LNP capabilities to further expand the reach of Moderna's technology."

"Moderna's deep expertise in mRNA and LNP technologies opens up a potentially game-changing opportunity for engineered macrophages," said Steven Kelly, President and Chief Executive Officer of Carisma. "*In vivo* delivery directly to monocytes and macrophages enables an off-the-shelf therapeutic approach that uses the patients' own cells to provide a truly personalized treatment. By combining Carisma's expertise in engineered macrophage biology and Moderna's pioneering *in vivo* mRNA delivery technologies, we are excited about the potential of this novel therapeutic approach for treating cancer. We are thrilled to be working with Moderna."

About the Collaboration

Under the terms of the agreement, Carisma will receive a \$45 million up-front cash payment and an investment by Moderna in the form of a \$35 million convertible note. Carisma will receive research funding and is eligible to receive development, regulatory, and commercial milestone payments, plus royalties on net sales of any products that are commercialized under the agreement. Carisma will be responsible for the discovery and optimization of development candidates while Moderna will lead the clinical development and commercialization of therapeutics resulting from the agreement. Moderna has the option to nominate up to twelve targets for development and commercialization.

About Moderna

In 10 years since its inception, Moderna has transformed from a research-stage company advancing programs in the field of messenger RNA (mRNA), to an enterprise with a diverse clinical portfolio of vaccines and therapeutics across six modalities, a broad intellectual property portfolio in areas including mRNA and lipid nanoparticle formulation, and an integrated manufacturing plant that allows for both clinical and commercial production at scale and at unprecedented speed. Moderna maintains alliances with a broad range of domestic and overseas government and commercial collaborators, which has allowed for the pursuit of both groundbreaking science and rapid scaling of manufacturing. Most recently, Moderna's capabilities have come together to allow the authorized use of one of the earliest and most-effective vaccines against the COVID-19 pandemic.

Moderna's mRNA platform builds on continuous advances in basic and applied mRNA science, delivery technology and manufacturing, and has allowed the development of therapeutics and vaccines for infectious diseases, immuno-oncology, rare diseases, cardiovascular diseases and auto-immune diseases. Moderna has been named a top biopharmaceutical employer by Science for the past seven years. To learn more, visit www.modernatx.com.

About Carisma Therapeutics

Carisma 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

Moderna Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including regarding: Moderna's collaboration with Carisma to discover, develop and commercialize CAR-M therapeutics for the treatment of cancer; the terms of that collaboration; and the potential for the collaboration to lead to personalized cancer treatments. The forward-looking statements in this press release are neither promises nor guarantees, and you should not place undue reliance on these forward-looking statements because they involve known and unknown risks, uncertainties, and other factors, many of which are beyond Moderna's control and which could cause actual results to differ materially from those expressed or implied by these forward-looking statements. These risks, uncertainties, and other factors include those risks and uncertainties described under the heading "Risk Factors" in Moderna's most recent Annual Report on Form 10-K filed with the U.S.

Securities and Exchange Commission (SEC) and in subsequent filings made by Moderna with the SEC, which are available on the SEC's website at www.sec.gov. Except as required by law, Moderna disclaims any intention or responsibility for updating or revising any forward-looking statements contained in this press release in the event of new information, future developments or otherwise. These forward-looking statements are based on Moderna's current expectations and speak only as of the date hereof.

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