



Omega Therapeutics Presents New Preclinical Data Demonstrating Pre-Transcriptional Modulation of Multiple CXCL Genes by a Single Epigenomic Controller

October 31, 2023 11:01 AM EDT

Coordinated modulation of epigenetic profile of CXCL1-8 genes with corresponding downregulation of gene expression and protein levels, and inhibition of immune cell recruitment, shown in multiple models of inflammatory disease

Demonstrates OMEGA platform's ability to prospectively engineer programmable mRNA candidates to enable multiplexing for controlled epigenomic modulation

CAMBRIDGE, Mass., Oct. 31, 2023 (GLOBE NEWSWIRE) -- Omega Therapeutics, Inc. (Nasdaq: OMGA) ("Omega"), a clinical-stage biotechnology company pioneering the development of a new class of programmable epigenomic mRNA medicines, today announced new preclinical data showcasing simultaneous and coordinated pre-transcriptional control of multiple genes co-located in an insulated genomic domain (IGD) by a single epigenomic controller (EC) at the 11th International mRNA Health Conference taking place in Berlin, Germany, October 31 – November 2, 2023.

"These new preclinical data show that, through deep understanding of disease biology and genomic architecture, our OMEGA platform is able to design a programmable mRNA candidate capable of multiplexing to pre-transcriptionally control the expression of multiple genes in preclinical models," said Thomas McCauley, Ph.D., Chief Scientific Officer of Omega Therapeutics. "By targeting a genomic locus containing a cluster of cytokine genes, we can precisely modulate immune activity to elicit a meaningful anti-inflammatory response. The potential applications of this strategy extend beyond any single disease and highlight the broad potential of precision epigenomic control."

Details for the poster presentation:

Title: Design and Characterization of a Programmable Epigenomic Controller Demonstrating Multiplexed Targeting of the CXCL1-8 Gene Cluster for Treatment of Inflammatory Disorders

Poster #: 79

Session information: Flash Poster Talks / New Company Introductions Session

Date and Time: Tuesday, October 31, 2023, from 4:00 pm to 5:00 pm CET

Key Findings:

- Treatment of human lung fibroblasts with CXCL1-8-targeting ECs correlated with corresponding decrease in gene expression of multiple CXCL chemokines
 - EC-induced changes in the epigenetic profiles of the CXCL1-8 genes were associated with decreased binding of NF-kB
- Human lung fibroblasts treated with a single CXCL-EC engineered to modulate the epigenetic profiles of the CXCL1-8 gene cluster showed downregulation of both mRNA and protein levels of CXCL1, 2 and 8
 - Cells treated with a CXCL-EC showed decreased ability to support neutrophil migration *in vitro*
- In a mouse model of lung inflammation, single administration of a mouse surrogate CXCL-EC resulted in decreased recruitment of neutrophils and B and T cells into bronchoalveolar fluid

The poster will be available on the Omega website at <https://omegatherapeutics.com/science/publications> at the same time as the presentation.

About Omega Therapeutics

Omega Therapeutics is a clinical-stage biotechnology company pioneering the development of a new class of programmable epigenomic mRNA medicines to treat or cure a broad range of diseases. By pre-transcriptionally modulating gene expression, Omega's approach enables controlled epigenomic modulation of nearly all human genes, including historically undruggable and difficult-to-treat targets, without altering native nucleic acid sequences. Founded in 2017 by Flagship Pioneering following breakthrough research by world-renowned experts in the field of epigenetics, Omega is led by a seasoned and accomplished leadership team with a track record of innovation and operational excellence. The Company is committed to revolutionizing genomic medicine and has a diverse pipeline of therapeutic candidates derived from its OMEGA platform spanning oncology, regenerative medicine, multigenic diseases including immunology, and select monogenic diseases.

For more information, visit omegatherapeutics.com, or follow us on [X](#) (formerly Twitter) and [LinkedIn](#).

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements contained in this press release that do not relate to matters of historical fact should be considered forward-looking statements, including without limitation statements regarding the broad potential of precision epigenomic control, the potential of the Company's pipeline of therapeutic candidates, and upcoming events and presentations. These statements are neither promises nor guarantees, but involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results,

performance or achievements expressed or implied by the forward-looking statements, including, but not limited to, the following: the novel technology on which our product candidates are based makes it difficult to predict the time and cost of preclinical and clinical development and subsequently obtaining regulatory approval, if at all; the substantial development and regulatory risks associated with epigenomic controllers due to the novel and unprecedented nature of this new category of medicines; our limited operating history; the incurrence of significant losses and the fact that we expect to continue to incur significant additional losses for the foreseeable future; our need for substantial additional financing; our investments in research and development efforts that further enhance the OMEGA platform, and their impact on our results; uncertainty regarding preclinical development, especially for a new class of medicines such as epigenomic controllers; potential delays in and unforeseen costs arising from our clinical trials; the fact that our product candidates may be associated with serious adverse events, undesirable side effects or have other properties that could halt their regulatory development, prevent their regulatory approval, limit their commercial potential, or result in significant negative consequences; the impact of increased demand for the manufacture of mRNA and LNP based vaccines to treat COVID-19 on our development plans; difficulties manufacturing the novel technology on which our epigenomic controller candidates are based; our ability to adapt to rapid and significant technological change; our reliance on third parties for the manufacture of materials; our ability to successfully acquire and establish our own manufacturing facilities and infrastructure; our reliance on a limited number of suppliers for lipid excipients used in our product candidates; our ability to advance our product candidates to clinical development; and our ability to obtain, maintain, enforce and adequately protect our intellectual property rights. These and other important factors discussed under the caption "Risk Factors" in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2023, and our other filings with the SEC, could cause actual results to differ materially from those indicated by the forward-looking statements made in this press release. Any such forward-looking statements represent management's estimates as of the date of this press release. While we may elect to update such forward-looking statements at some point in the future, we disclaim any obligation to do so, even if subsequent events cause our views to change.

Contact Investor contact: Eva Stroynowski 617.949.4370 estroynowski@omegatx.com Media contact: Jason Braco LifeSci Communications 646.751.4361 jbraco@lifescicomms.com