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Momenta Pharmaceuticals Announces Publication on the Design of M230, a Novel Autoimmune Disease Drug Candidate, in *Science Translational Medicine*

Data show M230's ability to block immune complex-mediated damage and robust efficacy in preclinical

CAMBRIDGE, Mass., Nov. 17, 2016 (GLOBE NEWSWIRE) -- Momenta Pharmaceuticals, Inc. (NASDAQ:MNTA), a biotechnology company specializing in the characterization and engineering of complex drugs, today announced that data from preclinical studies on its M230 program were published in *Science Translational Medicine*. The article describes fundamental insights into the mechanism of Fcγ receptor (FcγR) modulation that facilitated the design of multivalent Fc therapeutics, including M230, a selective immunomodulator of Fc receptors (SIFs).

Autoantibody immune complex (IC) recruitment and activation of FcγRs on immune cells is a pathological mechanism inherent to numerous autoimmune diseases. The inhibition of this mechanism is therefore a desirable target for therapeutic intervention, but the successful development of drug candidates has been limited by an incomplete understanding of FcγR biology and structural determinants controlling Fc-FcγR interactions. To this end, Momenta engineered a panel of multivalent proteins featuring different numbers of Fc domains and configurations, and performed a series of structure-activity relationship studies to characterize their FcγR binding avidity and extent of immune cell activation potential. These studies identified a trivalent Fc protein (M230) as the optimal structure combining high avidity binding without immune cell activation. M230 subsequently proved to potently inhibit multiple mechanisms of IC-driven cellular activation and displayed up to 40 times greater in-vivo potency than intravenous immunoglobulin (IVIg) in animal models of rheumatoid arthritis, immune thrombocytopenic purpura, and epidermolysis bullosa acquisita.

"Other companies have attempted to target the inhibition of the FcγR system with heterogeneous Fc polymers but, through our work and expertise in understanding structure-function relationships, we have identified what we believe to be optimal properties of multivalent Fc products for blocking IC-mediated damage," said Anthony Manning, Ph.D., Senior Vice President of Research at Momenta and co-author on the paper. "We believe these insights can also be applied to the design of other novel therapeutics that utilize FcγR interactions as part of their mechanism of action. We look forward to bringing M230 into the clinic and are targeting the initiation of a first-in-human study next year."

The article is titled "Elucidating the interplay between IgG-Fc valency and FcγR activation for the design of immune complex inhibitors" and is available at <http://stm.sciencemag.org/lookup/doi/10.1126/scitranslmed.aaf9418>.

About M230, Selective Immunomodulator of Fc Receptors (SIF3)

Antigen-autoantibody immune complexes (ICs) are a common pathogenic hallmark of many autoimmune diseases. The multiple Fc domains of ICs aggregate Fcγ receptors (FcγRs), triggering cellular activation processes that play critical roles in inflammation. The rational engineering of therapeutics that broadly antagonize FcγRs has been hampered by a limited understanding of the molecular determinants directing FcγR activation. Through the engineering and characterization of oligomeric Fc structures, Momenta was able to provide novel insights on FcγR modulation and has generated a unique recombinant Fc oligomer therapeutic candidate, referred to as M230, with optimal physiochemical and biological properties. Preclinical studies with M230 have shown enhanced potency over intravenous immunoglobulin in animal models of autoimmune disease. M230 is currently in preclinical development and has the potential to be developed as a first-in-class therapeutic for patients with IC-driven disease.

About Momenta

Momenta Pharmaceuticals is a biotechnology company specializing in the detailed structural and functional analysis of complex drugs and is headquartered in Cambridge, MA. Momenta is applying its technology to the development of generic versions of complex drugs, biosimilar and potentially interchangeable biologics, and to the discovery and development of novel therapeutics for autoimmune indications.

To receive additional information about Momenta, please visit the website at www.momentapharma.com, which does not form a part of this press release. The company's logo, trademarks, and service marks are the property of Momenta Pharmaceuticals, Inc. All other trade names, trademarks, or service marks are property of their respective owners.

Cautionary Note Regarding Forward-Looking Statements

Statements in this press release regarding management's expectations, beliefs, intentions, goals, strategies, plans or prospects, including statements about the significance and application of research findings, future clinical studies and clinical study results for M230 are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements can sometimes be identified by words such as "anticipate," "believe," "continue," "could," "hope," "target," "project," "goal," "objective," "plan," "potential," "predict," "might," "estimate," "expect," "intend," "may," "seek," "should," "target," "will," "would," "look forward" and other similar words or expressions, or the negative of these words or similar words or expressions. Such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. Important factors include Momenta's ability to fund and successfully conduct clinical trials of its M230 product candidate, either independently or in collaboration with a collaborative partner; the possibility of unfavorable or disappointing clinical trial results, including whether the properties of our multivalent Fc products for blocking IC-mediated damage are optimized for potential use in humans; Momenta's ability to successfully partner the M230 program; and the factors listed under "Risk Factors" in Momenta's Quarterly Report on Form 10-Q for the quarter ended September 30, 2016 filed with the Securities and Exchange Commission, as well as other documents that may be filed by Momenta from time to time with the SEC. Momenta is providing the information in this press release as of the date hereof and assumes no obligations to update the information included in this press release or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

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