



Moderna Announces New Collaboration with AstraZeneca to Co-Develop and Co-Commercialize Relaxin mRNA Therapeutic for Heart Failure

November 1, 2017

CAMBRIDGE, Mass., November, 1, 2017 — Moderna Therapeutics today announced a new license and collaboration with AstraZeneca to co-develop and co-commercialize a messenger RNA (mRNA) therapeutic encoding for Relaxin. The companies will advance the new Relaxin development candidate, AZD7970, toward the clinic as an investigational treatment for heart failure.

Heart failure occurs when the heart is weakened and cannot pump enough blood to meet the body's needs. AZD7970 is being developed to instruct cells in the body to produce and express Relaxin, a secreted protein with systemic effect. Biologic functions for Relaxin suggest that expression of the hormone may directly impact underlying conditions that exacerbate heart failure, leading to the regrowth of heart tissue, controlling inflammation, reordering the extracellular matrix, improving renal function, and relieving hepatic portal pressure. AZD7970 utilizes one of Moderna's proprietary formulations, N2GL, which enables systemic, repeat dosing of mRNA therapeutics.

"AstraZeneca has been a valued biopharma partner to Moderna since 2013 and is one of our largest shareholders. Together, we are excited to progress this Relaxin mRNA therapeutic toward the clinic, after significant efforts at Moderna that have advanced the program through discovery," said Stéphane Bancel, Chief Executive Officer, Moderna. "We could not have chosen a more supportive and strategic partner than AstraZeneca to help advance transformative mRNA medicines for high unmet needs in the cardiovascular space."

Approximately 5.7 million adults in the U.S. alone have heart failure. About half of those who develop heart failure die within five years of being diagnosed. A global health burden, heart failure impacts approximately 26 million people around the world.

"At AstraZeneca, we are committed to harnessing breakthrough science and technology to advance innovative treatments for heart failure, and as part of that commitment, we are pleased to enter into a new collaboration with Moderna to pursue a novel Relaxin programme," said Menelas Pangalos, Executive Vice President of AstraZeneca's Innovative Medicines and Early Development (IMED) Biotech Unit. "mRNA therapeutics have the potential to help address the unmet need and poor outcomes associated with heart failure and, ultimately, to become a transformational treatment for patients."

Under the terms of the new agreement between the companies, Moderna will fund and be responsible for preclinical development of AZD7970, including the conduct of Good Laboratory Practice (GLP) toxicology studies. AstraZeneca will be responsible for early clinical development of AZD7970, and Moderna and AstraZeneca will share the costs of late-stage clinical development. Moderna and AstraZeneca will co-commercialize AZD7970 in the U.S. under a 50:50 profit sharing arrangement. AstraZeneca will lead ex-U.S. commercialization efforts, with Moderna receiving tiered royalties up to substantial double digits on ex-U.S. sales.

This marks the second strategic agreement between Moderna and AstraZeneca to advance mRNA therapeutics in the cardiometabolic space. The lead program from the first strategic agreement, which was announced in 2013, is AZD8601, a localized mRNA therapeutic that encodes for vascular endothelial growth factor (VEGF-A). AZD8601 has successfully completed a Phase 1 study, and AstraZeneca has submitted a Clinical Trial Application (CTA) in Europe to initiate a Phase 2a study of AZD8601 in heart failure patients undergoing cardiac bypass grafting (CABG) surgery.

About Moderna's Pipeline

Moderna's pipeline comprises 17 mRNA development candidates (DCs), including both internally developed and partnered programs across five modalities: prophylactic vaccines, therapeutic vaccines, intratumoral immuno-oncology therapeutics, localized therapeutics and liver therapeutics. Clinical trials are underway for seven of these DCs, with the remaining ten DCs advancing toward the clinic.

About Moderna Therapeutics

Moderna is a clinical stage pioneer of messenger RNA (mRNA) therapeutics and vaccines, an entirely new drug technology that directs the body's cells to produce intracellular or secreted proteins. With its breakthrough platform, Moderna is developing mRNA vaccines and therapeutics as a new class of medicines for a wide range of diseases and conditions, in many cases by addressing currently undruggable targets. Moderna is developing its innovative mRNA medicines for infectious diseases, cancer (immuno-oncology), rare liver diseases, cardiovascular diseases and pulmonary diseases, through proprietary development and collaborations with strategic partners. Headquartered in Cambridge, Mass., privately held Moderna currently has strategic agreements with AstraZeneca, Merck and Vertex Pharmaceuticals, as well as the Defense Advanced Research Projects Agency (DARPA), an agency of the U.S. Department of Defense; the Biomedical Advanced Research and Development Authority (BARDA), a division of the Office of the Assistant Secretary for Preparedness and Response (ASPR) within the U.S. Department of Health and Human Services (HHS); and the Bill & Melinda Gates Foundation. To learn more, visit www.modernatx.com.

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