

Advancing mRNA therapy

Ethris GmbH, a leader in mRNA-based therapeutics with specific expertise in pulmonary disease, recently announced a five-year strategic research collaboration with AstraZeneca and its global biologics research and development arm, MedImmune. The collaboration is focused on developing new stabilised non-immunogenic modified RNA therapies for respiratory diseases using Ethris' proprietary SNIM®RNA technology. Dr. Gita Dittmar, head of corporate development, and Prof. Dr. Christian Plank believe this collaboration validates Ethris' leading position in development and delivery of mRNA therapies for the treatment of pulmonary diseases.

Ethris was founded as a spinoff from two universities, by Prof. Dr. Plank, who still serves as Professor at TU Munich, and Dr. Carsten Rudolph, Ethris CEO and Academic at LMU Munich, combining their research into delivery systems and pathways. The two initially focused on plasmidDNA research but later switched to messenger RNA (mRNA) as the vehicle to deliver genetic instructions to cells. Early on, Ethris demonstrated the potential of their platform in the treatment of pulmonary disease in mouse models. This led to an early partnership with Shire Pharmaceuticals. While Ethris' partnership with Shire has ended, this early research has been useful in advancing both its mRNA and its delivery platform, and generally addressing the main issues which have stalled the development of mRNA therapies. When delivered into the body, mRNA both activates the immune system and is highly unstable. In addition, in order to be functional, mRNA must enter the target cells of interest by crossing the cell membrane, which requires a carrier system to transport it into the cells. Ethris has developed two technology platforms to enable the use of messenger RNA as a therapeutic agent: The Stabilized Non-Immunogenic mRNA (SNIM®RNA) technology for transcript therapy, as well as proprietary delivery technologies for

SNIM® RNA delivery. These enable the discovery, design and development of transcript therapies that restore missing functions in patients' cells and tissues.

Ethris will utilize its proprietary SNIM®RNA technology to develop multiple new targets for investigation in the diseases of asthma, chronic obstructive pulmonary disease and idiopathic pulmonary fibrosis exclusively with AstraZeneca and the company's MedImmune and Innovative Medicines (IMED) biotech units. Ethris' proprietary mRNA technology can be targeted to the lungs where it helps to replace, inhibit or augment proteins that are involved in causing or exacerbating respiratory disease, but mRNA-based therapeutics may also provide new opportunities to modify the course of the disease or its symptoms.



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Dr. Dittmar emphasises that beyond the treatment of pulmonary diseases, mRNA is a very promising tool for clinical applications in general. Upfront and milestone payments from the AstraZeneca partnership will allow Ethris to research that potential and further advance its own pipeline. "We are a tech platform company however, first and foremost. Our immediate goal is to advance our technology into the clinical stage."

