DIOSynVax and Ethris Publish Preclinical Proof of Concept for Their Broadly Protective Vaccine Technologies in *Nature Biomedical Engineering*

- Successful vaccine candidate combining DIOSynVax's computational multi-virus vaccine antigen payload technology and Ethris' proprietary immunogenic messenger RNA (SNIM mRNA) and lipidoid nanoparticle (SNaP LNP) platforms
- Data demonstrates broad *in vivo* immune responses against multiple sarbecocoronaviruses and SARS-CoV-2 variants

Munich, Germany and Cambridge, United Kingdom, September 25, 2023 - Ethris GmbH, a leading biotechnology company pioneering next-generation messenger RNA (mRNA) therapeutics and vaccines, and DIOSynVax, a Cambridge UK based clinical stage biotech spinout specialized in the development of multi-valent vaccine antigen payloads (VAPs), announced today the publication of preclinical proof of concept results for each of their platform technologies in *Nature Biomedical Engineering*. The article titled "Single RBD-based antigen elicits broad humoral response against SARS-CoV-2 and related sarbecoviruses across different vaccine technologies" presents data supporting the broad applicability of both companies' technologies in the discovery and development of robust vaccine candidates capable of generating broad immunogenicity based on digitally designed, immune-optimized antigens combined with advanced mRNA formulation and product stability characteristics.

"Prior to the last pandemic, we had already experienced the serious threat of betacoronavirus outbreaks and grappled with the evolving variants that continually emerge. Today's publication in collaboration with DIOSynVax serves as a strong validation and provides important preclinical evidence showcasing the efficacy of our mRNA modification and design technologies as well as our advanced stabilized nanoparticle delivery platform," said **Dr. Carsten Rudolph, CEO of Ethris**. "Through our suite of in-house developed mRNA and LNP technology platforms, we are able to create candidates with superior thermostability and resistance to mechanical manipulation. This capability enables us to develop vaccines and therapeutics that can overcome limited stability and widespread biodistribution, which currently represent the biggest limitations for mRNA medicines."

"Publishing this study in *Nature Biomedical Engineering*, a renowned peer-reviewed journal, further indicates the value of our innovative technology for computationally selecting immune-optimized and structurally engineered antigens to create new vaccines," said **Dr. Jonathan Heeney, CEO of DIOSynVax**. "These initial results are highly encouraging and demonstrate the great potential of *in silico* designed antigens to adapt to new virus variations and even pre-date variant emergence, which underscores our commitment to staying at the forefront of vaccine development."

The preclinical research published in *Nature Biomedical Engeneering* employed DIOSynVax's innovative technology to design a core antigen sequence capable of fostering immune responses against a range of closely related viruses. DIOSynVax's technology generated a panel of antigens (T2_13 to T2_17), with T2_17 proving most effective in stimulating broad immune responses to clinically relevant viruses. By adding the formulation into an mRNA vaccine candidate using the Ethris platform, the study confirmed the potential of T2_17 as a pan-sarbecovirus antigen, demonstrating its suitability as a booster and its effectiveness as an mRNA immunogen in a range of animal models with broad protection from sarbecoviruses as well as emerging variants of concern. Collectively, the findings from the study demonstrated that T2_17 is an efficacious single antigen for inducing immune responses against SARS-CoV, SARS-CoV-2, RaTG13, WIV16 and various SARS-CoV-2 variants, further validating the applicability of the vaccine technology employed by DIOSynVax as well as Ethris' proprietary platforms.

About DIOSynVax
DIOSynVax provides a solution to a significant unmet need in the vaccine industry. Despite the accelerated vaccine manufacturing timelines to meet the global needs of the COVID-19 pandemic, the risk of vaccine failure due to circulating variants of concern illustrates a major weakness in global vaccine technology. The crux of the problem with current vaccine technology is with vaccine antigens, the key information that vaccines use to precision-target the immune response. The wild-type Spike antigens used in current COVID-19 vaccines provide protection that is quite narrow and limited against future variants. To provide broader protection, a new approach to antigen creation is needed.

In 2017 DIOSynVax (Digital Immune Optimised Synthetic Vaccines) was established as a spin-out of the University of Cambridge. Its technology brings together different areas of cutting edge science into a pipeline of candidates. The result is new VAPs with superior protection from highly variable pathogens, or viral variants across viral families. These computationally generated, synthetic genes represent vaccine antigens that are designed and immunologically selected to give the greatest possible breadth of protection from a variety of pathogens.

About Ethris
Ethris has paved a new path from genes to therapeutic proteins, using its proprietary RNA and lipidoid nanoparticle technology platform to discover, design and develop innovative therapies. With more than a decade as an mRNA pioneer, Ethris is a global leader in delivering stabilized mRNAs directly to the respiratory system via optimised formulation and nebulisation technologies. The company is rapidly advancing its mRNA pipeline of immuno-modulation, protein replacement therapies, and differentiated vaccines, with the ultimate goal of improving patients' lives.

For more information, visit www.diosvax.com or www.ethris.com

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