

PRESS RELEASE

Hovione Technology signs collaboration agreement with Kiel University on high dose dry powder inhalation delivery

30th August 2019 – Hovione Technology, a specialist in development of innovative inhalation device technology, has announced today it has entered into a collaboration agreement with Kiel University, Institute of Pharmacy in Germany, a reference research institution on inhaled drug delivery. The collaboration relates to the research by Kiel University on advanced dry powder formulation approaches for high dose applications using Hovione Technology's unique portfolio of Large Dose DPIs.

"We are excited to collaborate with world leading researchers in the field of inhaled drug delivery and very pleased they decided to work with our Large Dose DPI technologies TwinMax and 8Shot. We are observing new drugs to treat cystic fibrosis, pulmonary arterial hypertension, idiopathic pulmonary fibrosis or lung infections are requiring delivery of large lung doses, often within the range of 50 to 150 mg", said João Ventura Fernandes, Hovione Technology's Director of Technology Development and Licensing.

"If we want to deliver high doses of drug to the lung, it is not only about an innovative formulation, but we also need an effective delivery device", said Professor Regina Scherließ, Director of Kiel University's Institute of Pharmacy, working for 15 years in the area of inhaled drug delivery. "Thus, we are very happy to include Hovione Technology's Large Dose DPIs into our formulation research."

The collaborative project will develop and explore new formulation possibilities using softpellets and nanocrystals for high dose administration via dry powder inhalation using antibiotics such as clarithromycin and rifampicin as model drugs. Hovione Technology's TwinMax and 8Shot inhalation devices, capable of delivering high doses of powder formulations, will be used throughout formulation development and optimization.

About Large Dose DPIs

Hovione Technology's TwinMax and 8Shot dry powder inhalers are designed to enable safe and effective delivery of large doses to the lung. Featuring patent-granted inhaler technology compatible with drug doses up to 400 mg, delivered conveniently to patients from multiple inhalations, they are suitable for inhaled delivery of antibiotics, peptides, anti-virals, vaccines, pain or rescue treatments.

For further information, please contact:

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About Hovione Technology

Hovione Technology offers access to a complete portfolio of innovative, cost-effective dry powder inhalation devices – disposable, capsule-based, blister-based and large dose DPIs.

With over 20 years of expertise developing innovative inhaler technology, Hovione Technology's team has been behind the first market approved disposable dry powder inhaler for influenza treatment in Japan, the TwinCaps DPI. Millions of patients are being treated every year with Hovione Technology's innovative inhaler technology.

www.hovionetechnology.com

About Kiel University

Kiel University (also referred to as the CAU) uses research, teaching and the transfer of science to address the great challenges of our time in health, environmental and cultural change, nutrition and energy. In doing so, it ensures peace and preserves livelihoods for future generations. The CAU uses responsible actions to make sure that scientific discoveries are transferred into all sectors of our society by interdisciplinary thought - regardless of short-lived trends - where they are incorporated into political, economic and social decisions aimed at securing peace and prosperity.

When it was founded back in 1665, the CAU set itself the motto "Pax Optima Rerum: peace is the most valuable asset." This maxim is as applicable today as it was over 350 years ago. The university wants to follow this key idea and contribute towards creating a peaceful, fair world in which everyone lives freely and comfortably. A world in which treating the environment with respect also enables future generations to enjoy the same benefits.

The Department of Pharmaceutics and Biopharmaceutics, being led by Prof. Dr. Regina Scherließ, focuses on research in the area of dry powder inhalation and nanoparticulate formulations for immunoactives.

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