

Wallenberg Fellow Utilizes PEXA's Research Instrument in Groundbreaking Vaccine and Antibody Study for Respiratory Infections

Professor Charlotte Thålin at Karolinska Institutet has been named a Wallenberg Academy Fellow 2025, receiving support for her research into airway antibodies. Her work is significantly enhanced by PEXA's patented research instrument, with the goal of developing a nasal spray capable of preventing respiratory infections.

"Thanks to this instrument, we can now study antibodies in the lower airways — a true game-changer for the development of both vaccines and antibody-based therapies," says Charlotte Thålin.

Our airways are protected by a specific type of antibodies, IgA, which help prevent viruses from infecting us. Despite this, most current vaccines for respiratory infections — such as influenza — are delivered via intramuscular injection, which primarily stimulates IgG antibodies in the blood but fails to establish the crucial IgA defense in the airways. There is great potential in administering vaccines or antibodies directly to the airways via nasal spray or inhalation. This approach would provide superior local protection and reduce viral transmission. Ready-made antibodies delivered the same way could also provide immediate protection, especially for individuals with compromised immune systems.

The goal of Charlotte Thålin's research is to identify the antibodies that offer the most effective protection against infection and to develop optimized antibody-based nasal sprays using this knowledge. Achieving this requires detailed study of the immune response in both the upper and lower airways. While sampling from the upper airways is relatively straightforward, analyzing antibodies in the lower airways has until now required invasive procedures such as bronchoscopy.

"This is truly exciting, as it allows us to detect and analyze antibody structures in the lower airways without relying on invasive methods like bronchoscopy," says Charlotte Thålin.

PEXA's patented research instrument collects biological samples from the small airways through a simple exhalation maneuver. These samples contain molecules that reflect the fluid lining of the lung's most inaccessible regions — where many respiratory diseases, including lung cancer, begin and develop. The instrument is currently used in pharmaceutical research and biomarker studies, with an eye toward future diagnostic applications.

"We extend our warmest congratulations to Charlotte Thålin on receiving the prestigious Wallenberg Academy Fellow award. It is both an honor and an inspiration that our non-invasive technology can support her groundbreaking research into antibodies in the lungs. We look forward to following this important work, which has the potential to help shape the future of vaccines," says Tomas Gustafsson, CEO of PEXA AB.

The Wallenberg Academy Fellow program was established in 2012 by the Knut and Alice Wallenberg Foundation in close collaboration with five Royal Academies and 16 Swedish universities. It is Sweden's largest private initiative for supporting young researchers. To date, 288 researchers have been selected as Wallenberg Academy Fellows.

[Click here to learn more about the research \(Wallenberg Foundation website\)](#)

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About PEXA AB:

PEXA AB PEXA AB (556956-9246) has developed the PEXA 2.1, a patented research instrument that helps researchers intelligently collect biological samples from the smallest airways through a simple exhalation maneuver. PEXA's technology is currently used by prominent research groups in several different countries and research with the instrument has resulted in approximately 50 scientific publications, which serve as reference material for PEXA's method. The company's long-term goal is to market and sell diagnostic instruments for popular diseases (e.g. lung cancer and COPD) to be used globally for diagnosis or general screening at facilities where care is offered. The company intends at the time it is relevant to sell to clinics to have developed more patient-friendly, flexible and commercial products, which means that PEXA addresses a significantly wider market, which today includes several million patients globally.

PEXA's B share is listed on the Spotlight Stock Market.