

Advancements for PEXA at ERS, the world's largest respiratory congress

PEXA AB ("PEXA") is proud to announce that the Company's method received scientific interest at the world's largest lung congress, ERS, in Milan, Italy, with 25,000 participants from 9 to 13 September, 2017. The researchers behind PEXA interpreted the reported findings and the interest in the results among researchers in this field as a breakthrough for the method.

Five important studies* based on PEXA were presented at the congress, showcasing the potential of the method from different aspects. However, the most important news at the congress was that by means of a sensitive analysis method with high reproducibility, more than 145 different proteins had been detected and quantified in PEX samples from one single individual. The possibility to compare protein profiles in PEX samples from different individuals, offers a unique way to study the small airways in detail, a region of the lung that is otherwise very difficult to access but considered important for better understanding and diagnosis of respiratory diseases.

The study, conducted in collaboration between AstraZeneca and the Occupational and Environmental Medicine unit at Gothenburg University, and presented by Jörgen Östling, researcher at AstraZeneca, also succeeded in identifying a profile based on 57 different proteins having the capacity to distinguish asthmatics from healthy control individuals. Furthermore, it was shown that many of these proteins have important functions in the immune system and protect against problems like oxidative stress.

Taken together, these results show that PEX samples carry relevant information on lung pathobiology and are thus able to pave the way for discoveries that can lead to new and better medications and diagnostics for asthma, COPD and other respiratory illnesses. An unexpected but very interesting observation was that the relative quantity of many of the detected proteins changed with age, and that the ageing process appeared to be accelerated in asthma subjects.

A comparison between PEX samples and so-called bronchoalveolar lavage (BAL), i.e. washing of the bronchi, was presented by Annelie Behndig, pulmonologist at Norrland's University Hospital. The study indicated a strong correlation between the two methods. Surfactant protein A (the most common pulmonary-specific protein) and albumin had been measured in both BAL liquid and PEX samples from different individuals and was strongly and significantly correlated. The fact that the particles in PEX samples come from the lower airways is corroborated by the observation that there was no correlation, just as expected, between the corresponding substances in samples from PEXA and so called "bronchial wash", which represent the upper airways.

Two other studies showed that the lipid structure in the PEx samples was also altered in patients with asthma, as well as in smokers and people suffering from COPD. The latter study was presented by Emilia Viklund, doctoral candidate at Occupational and Environmental Medicine in Gothenburg. The discovery of an altered lipid profile in smokers and people with COPD is particularly interesting as no early marker for COPD has yet been found.

Comments from Professor Anna-Carin Olin of the Sahlgrenska Academy, one of the researchers behind PExA

“ERS 2017 was a kind of breakthrough for PExA. For the first time, we had the opportunity to present our results to a large audience of researchers. I really feel that the interest and “hunger” for our method has now increased considerably, especially as there is no previous non-invasive method that allows us to study and take samples from the small airways. All these new findings converge to confirm the value of PExA’s method in pulmonary research, especially as this non-invasive methodology will allow us to monitor the processes of diseases over time. We are looking forward to a very exciting future as more groups of researchers will get the opportunity to use the method to study and answer new questions, but also to follow up and verify findings in larger studies. We must remember that we are still in a very early phase of development.”

* Late Breaking Abstract - The first direct comparison between BAL-fluid and the PExA methodology in healthy individuals. *Session: Update and new perspectives in Airway Diseases. Presenter: A. Behndig, Umeå.*

Late Breaking Abstract - Exploring particles from exhaled air as a new source for protein biomarkers from the airways. *Session: Techniques in Biomarker selection. Presenter: J. Östling, AstraZeneca.*

Late Breaking Abstract - Aging change the protein-profile of lining fluid from small airways. *Session: Monitoring novel biomarkers in Asthma. Presenter: J. Östling, AstraZeneca.*

The effect of smoking on exhaled lining fluid from small airways. *Session: Techniques in Biomarker selection. Presenter: E. Viklund, Gothenburg.*

Pattern of phospholipids and Surfactant Protein A in Particles in Exhaled Air (PExA). *Session: Techniques in Biomarker selection. Presenter: A. Olin, Gothenburg.*

Abstracts can be found at: <http://k4.ersnet.org/prod/v2/Front/Program?e=42>

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PEXA AB (556956-9246) develops and markets a research instrument with associated products and services to lung researchers for simple and non-invasive sampling, in order to study respiratory diseases such as asthma and chronic obstructive pulmonary disease, COPD. Sampling with PExA can be used to detect lung diseases at an early stage. The sample can be likened to a “blood test for the small airways”. The aim is to facilitate the development of reliable and more individualised diagnosis, monitoring and treatment of respiratory diseases. The original idea and research behind the method comes from the unit for Occupational and Environmental Medicine at the Sahlgrenska Academy at Gothenburg University. Commercial operations started in 2010 with the support of GU Ventures incubator, and the company is founded by inventors, key employees, business angels and GU Ventures. PExA’s B share is listed on AktieTarget.