

# Obstructive Airway Diseases –role of the microbiota and immune response of bronchial epithelium

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**Project description:** Our aim is to understand the role of colonizations of viruses and bacteria of the airway and correspondently the immune response in bronchial epithelium in the pathogenesis of asthma and COPD using different omics approaches such as sequencing microbial S16, specific viruses, and host RNA. We have developed bronchoscopic procedures to take a series of sterile samples from large and small airways. We can also recruit the most interesting patient groups to different clinical study designs. We have now collected the samples from 12 patients and 6 health controls. RNA sequencing of biopsies and epithelial brush samples are on-going.

## Publications:

- Kupiainen H, Kuokkanen M, Lindqvist A, Jonsdottir, Kilpeläinen M, Virtamo H & Laitinen T: CHRNA5/CHRNA3 locus associates with increased mortality among smokers. **J Chron Obstruct Pulmon Dis** 2016; 11: 1-7.
- Koskela J, Kupiainen H, Katajisto M, Kilpeläinen M, Lindqvist A & Laitinen T: FEV1 measures show trends and identify constant decliners among COPD patients. **J Chron Obstruct Pulmon Dis**, 2016; 25: 1-6.
- Iwamoto H, Gao J, Koskela J, Kinnula V, Kobayashi H, Laitinen T & Mazur W: Differences in plasma and sputum biomarkers between COPD and COPD-asthma overlap. **European Respiratory Journal** 2014 ;43:421-9.
- Vattulainen S, Aho J, Salmenperä P, Bruce S, Tallila J, Gentile M, Sankelo M, Laitinen T, Koskenvuo JW, Alastalo T-P & Myllykangas S: Genetic Profiling of Pulmonary Arterial Hypertension Patients with Targeted Oligonucleotide-Selective Sequencing. **Molecular Genetics & Genomic Medicine** 2015; 3: 354–362
- Katajisto M, Koskela J, Lindqvist A, Kilpeläinen M & Laitinen T: Physical activity among COPD patients associates to the decreased use of short acting bronchodilators and the number of exacerbations. **Journal of Respiratory Medicine** 2015 109:1320-5.

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