

17 October  
2023

Tuesday  
LECTURE

9.35 - 10.15 am



## Breakthrough in molecular mechanisms of childhood asthma

### ABSTRACT

Airway diseases are still among the top 5 common causes of death and represent a major healthcare problem. Asthma is chronic obstructive disease that develops in some children in the very early life. Massive genotyping was conducted to identify risk alleles, but only revealed hits with n-numbers beyond thousands. One locus that stands out is the 17q21 locus carrying 9 genes. These genes are not specifically related to the immune system and their implication in asthma pathogenesis has been subject to many speculations. In the clinic it was observed that 17q21 children are initially suffering from viral infections. In frame of the ALLIANCE clinical cohort or the German Lung Center children of all ages were investigated and nasal brushings and nasal fluids along with numerous other samples were collected. Since the upper airway resemble the lower airways to a surprisingly high degree, we performed genome wide transcriptome analysis of 370 children. Genotyped children suffering of early asthma (wheeze up to 6 years) were investigated carrying either the wildtype or the 17q21 risk allele (hetero or homozygote). Surprisingly, the gene expression analysis revealed a clear picture, identifying GSDMB as the key gene, that is related to a downstream inflammatory cascade. In the presentation a pathogenesis pathway will be illustrated representing a first causative asthma model on a genetic risk allele.



### SPEAKER

#### Prof Dr Carsten Schmidt-Weber

Director of the Institute of Allergy Research & Chair of the Center of Allergy & Environment (ZAUM), Technical University and Helmholtz Center Munich, Germany

### HOST:

Department of Infection and Immunity (LIH)  
this conference is being held as part of the i2TRON retreat

### RESPONSIBLE SCIENTIST:

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\* As the space in the hotel is limited, please register your on-site participation by sending an email to [bianca.dragomir@lih.lu](mailto:bianca.dragomir@lih.lu)

#### Locations:

Lecture:  
Sport Hotel Leweck  
Room: Le Chalet

Lëpschter-Dellt  
L-9378 Lipperscheid

#### Webinar via webex:

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