

## **Are there different IgE antibodies? - Impact of IgE antibody glycosylation on allergic reactions**

Initiative: "Experiment!" (beendet)

Ausschreibung: Explorative Phase

Bewilligung: 18.12.2019

Laufzeit: 1 Jahre 6 Monate

IgE antibodies (Abs) mediate allergic reactions, including severe systemic anaphylaxis, by binding to the high-affinity IgE receptor on mast cells and basophils leading to release of inflammatory mediators. However, it is still not predictable why allergen-specific IgE Abs induce allergic reactions in some individuals but not in others. Furthermore, there is no reliable biomarker why some patients with allergic reactions to e.g. pollen develop chronic allergic conditions (asthma) over time and others not and why allergen-specific immunotherapy works in some patients but not in others. The hypothesis of this project is that the induction of different types of IgE Ab glycosylation patterns as described for IgG Abs will determine the IgE function and might explain different health outcomes and establish IgE glycosylation as strong biomarker to predict allergic reactions. In order to proof the hypothesis, in vitro and in vivo model systems as well as nano-liquid chromatography mass spectrometry will be used. A discovery that the type of IgE glycosylation could at least partially explain allergic reactions might allow the distinction of different patient groups and the establishment of a reliable biomarker.

### **Projektbeteiligte**

**Prof. Dr. Marc Ehlers**

Universität zu Lübeck

Institut für Ernährungsmedizin

Labor für Immunologie und Glykoanalytik

Lübeck