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Novel Cockroach Antigens and T Cell Epitopes

Researchers at the La Jolla Institute for Immunology (LJI) have employed proteomic and transcriptomic techniques to identify novel German cockroach (Bla-g) antigens recognized by allergen-specific T cells. They characterized T_H responses in a cohort of adult Bla-g sensitized subjects, either with or without asthma, and non-sensitized controls. T cell responses were detected for 10 known Bla-g allergens and an additional 10 novel Bla-g anitgens.

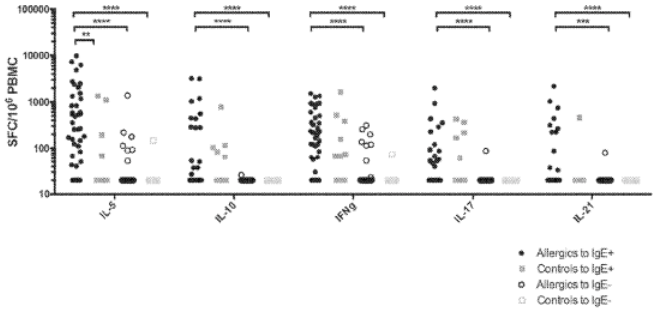
The German cockroach (*Blattella germanica*; Bla-g) is one of the most common indoor allergens among inner-city children and, as such, is a significant health problem worldwide. In addition, Bla-g allergies are strongly correlated to the development of asthma, and there is evidence that early exposure to Bla-g leads to increased Bla-g sensitization and, in turn, increased asthma severity. The humoral response to Bla-g allergens has been subject to intense research; however, the cellular arm of the immunological response has been investigated only superficially, limited to few of the known Bla-g allergens, and relatively few T cell Bla-g antigens and epitopes have been identified.

As such, researchers at LJI have used different characterization techniques to identify new Bla-g antigens and epitopes and to identify different allergen specificity between asthmatic and non-asthmatic subjects. The allergens and epitopes can be used for both therapeutic (subcutaneous allergy immunotherapy; SCIT) and diagnostic purposes. Additionally, subsets of the epitopes and allergens can be used to identify asthmatic versus non-asthmatic patients.

ADVANTAGES:

- **Novel Bla-g allergens and epitopes have been identified**
- **Allergens/epitopes can be used for both therapeutic and diagnostic purposes**

Identification of novel German cockroach antigens and T cell epitopes



Pattern of cytokine responses detected against IgE+ and IgE- novel Bla-g antigens in allergic and control subjects

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