Diagnosis of genuine allergic sensitization to *Blomia tropicalis* and *Dermatophagoides pteronyssinus* with micro-arrayed allergen molecules.

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Would the presenting author be interested in applying for a travel grant? Yes

Abstract text

Text: Background: *Blomia tropicalis* (Blo t) is an important HDM species in tropical and sub-tropical areas. Our goal was the characterization of allergens from this mite species and to distinguish between genuine IgE sensitization to Blo t and *Dermatophagoides pteronyssinus* (Der p), co-sensitization and cross-sensitization using molecular allergy diagnosis.

Methods: Recombinant allergens (Blo t 1, Blo t 2, Blo t 5, Blo t 8, Blo t 10, Blo t 13, Blo t 21) produced by expression in *Escherichia coli* and characterized by mass spectrometry, circular dichroism analysis and patients' IgE reactivity, were spotted onto a micro-array chip along with the most important Der p allergens. Sera from Blo t-exposed (group 1: n=54) and Blo t non-exposed (group 2: n=33) HDM allergic patients were tested for IgE and IgG reactivity on the microarray chip. Cross-reactivity between the two species was analysed using IgE inhibition experiments.

Results: We found that Blo t 2, Blo t 5 and Blo t 21 were the most important allergens for Blo t exposed HDM sensitized patients. The findings from the inhibition experiments and IgE profiling facilitated the development of an algorithm to differentiate genuine sensitization to Blo t and Der p, with or without cross-reactivity or co-sensitization.

Conclusion: Our results demonstrate that micro-arrays containing a panel of the most important Blo t and Der p allergens are able to identify the disease-eliciting HDM species and provides an algorithm to classify patients, which is a prerequisite for the selection of the allergen-specific immunotherapy.

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Conflict of Interest statement

Do you have any conflict of interest to declare?: No

Affirmation

1. Consent to participate and present onsite: Yes

2. Consent to publication publication: Yes

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