Dokumenttyp: journal article

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Titel des Beitrags: Api m 10, a genuine A. mellifera venom allergen, is clinically relevant but underrepresented in therapeutic extracts.

Abstract: Generalized systemic reactions to stinging hymenoptera venom constitute a potentially fatal condition in venom-allergic individuals. Hence, the identification and characterization of all allergens is imperative for improvement of diagnosis and design of effective immunotherapeutic approaches. Our aim was the immunochemical characterization of the carbohydrate-rich protein Api m 10, an Apis mellifera venom component and putative allergen, with focus on the relevance of glycosylation. Furthermore, the presence of Api m 10 in honeybee venom (HBV) and licensed venom immunotherapy preparations was addressed. Api m 10 was produced as soluble, aglycosylated protein in Escherichia coli and as differentially glycosylated protein providing a varying degree of fucosylation in insect cells. IgE reactivity and basophil activation of allergic patients were analyzed. For detection of Api m 10 in different venom preparations, a monoclonal human IgE antibody was generated. Both, the aglycosylated and the glycosylated variant of Api m 10 devoid of cross-reactive carbohydrate determinants (CCD), exhibited IgE reactivity with approximately 50% of HBV-sensitized patients. A corresponding reactivity could be documented for the activation of basophils. Although the detection of the native protein in crude HBV
suggested content comparable to other relevant allergens, three therapeutical HBV extracts lacked detectable amounts of this component. Api m 10 is a genuine allergen of A. mellifera venom with IgE sensitizing potential in a significant fraction of allergic patients independent of CCD reactivity. Thus, Api m 10 could become a key element for component-resolved diagnostic tests and improved immunotherapeutic approaches in hymenoptera venom allergy.