Basophil activation test using recombinant allergens: highly specific diagnostic method complementing routine tests in wasp venom allergy.

Skin testing can expose allergic subjects to potential systemic reactions, sensitization against unrelated proteins, and increased risk of future sting reactions. Therefore the continuous improvement of in vitro diagnostic methods is desirable. Recombinant allergens have been shown to improve the sensitivity of specific IgE (sIgE) detection in vitro whilst no data is available regarding their application and reliability in basophil activation test (BAT). Here we aimed to compare the specificity and sensitivity of recombinant allergens Ves v 1, Ves v 2, Ves v 3 and Ves v 5 in both specific IgE (sIgE) detection in vitro and basophil activation test. sIgE detection by ELISA or ImmunoCAP and BAT towards the panel of recombinant allergens Ves v 1, Ves v 2, Ves v 3 and Ves v 5 were performed in 43 wasp venom allergic patients with a history of anaphylactic reaction and sIgE seropositivity, as well as 17 controls defined as subjects with a history of repetitive wasp stings but absence of any allergic symptom. The BAT performed with the recombinant allergens Ves v 1, Ves v 2, Ves v 3 and Ves v 5 markedly improved the specificity of diagnosis in wasp venom allergic subjects when compared to the respective sIgE detection in serum.
recombinant allergens Ves v 5, Ves v 3 and Ves v 1 provides an emerging highly specific in vitro method for the detection of wasp venom allergy, compared to the sIgE detection. Recombinant allergens applied to BAT represent a step forward in developing reliable in vitro tests for specific diagnosis of allergy.