**Recombinant allergens as diagnostics: correlation with IgE antibody to natural allergens.**

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LD Vailes, K Ichikawa, A Pomes, E Best, M McDermott,A Jacquet, and MD Chapman.

*U. Virginia, Charlottesville, VA, USA; U. Tsukuba,Ibaraki, Japan; Heska Corporation, Fort Collins, CO, USA; and U. Libre deBruxelles, Gosselies, Belgium.*

Recombinant forms of cat, mite, and cockroach allergens were compared to the purified natural allergens for IgE ab reactivity using a chimeric ELISA. Recombinant Bla g 1, Bla g 2, and Pro Der f 1 were produced in Pichia pastoris; rFel d 1 in Baculovirus; and Pro Der p 1 in CHO cells. Allergens were purified using ion exchange, or mAb affinity chromatography, followed by gel filtration HPLC. Natural allergens were purified from extracts of house dust, spent mite culture or cockroach fras. With the exception of rBla g 1, the recombinant allergens were glycosylated showing diffuse banding at a higher molecular weight than the natural allergen on SDS-PAGE. Allergen specific IgE ab to natural or recombinant allergens was measured in large panels of sera by ELISA. Results were quantified using a chimeric mouse anti Der p 2 / human IgE ab to form a control curve. The correlation between IgE ab binding to recombinant versus natural allergen were as follows:Bla g 1: r = 0.92, n = 34 sera; Bla g 2: r = 0.93, n = 26; Der f 1: r =0.96, n = 98; Der p 1: r = 0.92 , n = 33; Fel d 1 r = 0.95, n = 34. The results showed an excellent quantitative correlation between IgE ab to natural and recombinant allergens ($p < 0.001$). Glycosylation had no effect on IgE ab binding. Recombinant allergens provide new tools for allergy diagnosis.