

## SYNOPSIS

- Allergen-extract-based diagnostic tests do not identify the specific molecules causing the allergen.
- Component-resolved tests based on recombinant allergens allow precise identification of disease-causing sensitivities.
- Detection of specific Bet v 1 allergen (the major birch pollen allergen) indicates that the patient may be suitable for immunotherapy.
- Birch pollen-extract tests may incorrectly suggest a patient is sensitive to birch due to cross-reactivity with other homologous proteins in birch. Such patients would not benefit from birch immunotherapy.
- Component-resolved grass pollen tests can show which patients are genuinely sensitized to grass pollen, and thus who may benefit from immunotherapy.

Citation: Kazemi-Shirazi L et al. Recombinant marker allergens: diagnostic gatekeepers for the treatment of allergy. *Int Arch Allergy Immunol* 2002; **127**: 259–68.

## Recombinant marker allergens: a new horizon in allergy management

This paper shows that recombinant allergens are truly the diagnostic gatekeepers of allergy treatment. Immunotherapy can only be successful if the patient is truly allergic to the allergen. Unfortunately, allergen-extract tests may falsely identify patients as sensitive because of cross-reactivities. Thus, component-resolved tests are needed. ImmunoCAP™ offers such tests. Use of recombinant allergens may identify patients sensitized to pollen profilins. Such patients are at risk of developing allergic reactions to various plant pollens and plant-derived foods, and thus it may be useful to monitor allergic patients for the development of profilin sensitivity.

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- Twenty-four allergic patients were treated with birch pollen rush immunotherapy, and sensitizations to recombinant birch pollen proteins (rBet v 1, rBet v 2 and rBet v 4) were assessed for up to 3 years using the Pharmacia CAP System™.
- The Pharmacia CAP System™ showed that 29% of patients developed an IgE sensitization to rBet v 2 or rBet v 4 during treatment. In three patients, these new sensitizations occurred during the first year of treatment.
- IgE levels to rBet v 2 and rBet v 4 were low in those who developed sensitizations to these allergens.

Citation: Movérare R et al. Development of new IgE specificities to allergenic components in birch pollen extract during specific immunotherapy studied with immunoblotting and Pharmacia CAP System™. *Allergy* 2002; **57**: 423–30.

## Recombinant allergens allow monitoring of new sensitivities during immunotherapy

Monitoring for new sensitivities during immunotherapy may be warranted. This can be done by immunoblotting or crossed radio-immunoelectrophoresis, but these are semi-quantitative techniques. In contrast, using recombinant allergens on the Pharmacia CAP System™ allows quantification of IgE levels. This study shows that a significant proportion of patients develop new sensitivities to birch allergens during birch pollen-extract immunotherapy, although the IgE levels are low. The clinical significance of this is not yet known, but clearly, the ability to accurately monitor the development of specific sensitivities during immunotherapy is likely to be of value. The use of recombinant allergens in tailor-made immunotherapies, as opposed to extract treatments, may prevent the development of new sensitizations.

## SYNOPSIS

- Allergies to peanuts and tree nuts account for the majority of fatal anaphylactic reactions.
- Quantification of peanut-specific IgE levels can be diagnostic – a level  $\geq 15$  kU/L is associated with a  $\geq 95\%$  chance of an allergic reaction.
- Peanut allergy usually develops early in life and is often a lifelong disorder.
- About 20% of young infants, particularly those with a peanut-specific IgE level of  $< 5$  kU/L, will outgrow their peanut allergy.
- Patient education is essential in the management of peanut allergy in order to avoid accidental ingestion, and to improve recognition and early treatment of anaphylaxis.

Citation: Sampson HA. Peanut Allergy. *N Engl J Med* 2002; **346**: 1294–9.

## Peanut allergy: IgE testing is useful

The prevalence of peanut allergy appears to be increasing in many westernized countries. The cause of this increase is not known, although exposure to peanuts early in life is a possibility. It is important that any patient suspected of having an adverse reaction to peanuts is evaluated by a physician experienced in the area. Specific IgE tests are useful in diagnosis and may prevent the need for potentially unpleasant food challenge tests. In addition, IgE levels may indicate the possibility of outgrowing the disorder, and children with relatively low IgE levels should be tested regularly for continuing allergy. The author notes that skin-prick tests can remain positive for many years in individuals who have outgrown their allergy, and suggests that specific IgE testing is more useful in this context.