Identification of Major Cashew and Walnut Allergens

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Technology description

Researchers have identified allergens in cashews, walnuts, pecans, almonds, chestnuts, and pistachios using serum from allergic patients to screen cDNA expression libraries. Once cloned and expressed, the offending proteins are subjected to epitope mapping techniques and mutagenesis to generate a hypoallergenic version. At the same time, researchers are developing polyclonal and monoclonal antibodies to tree nut allergens to be used by the food industry in testing suspected foods for contamination with allergens.
Cashews and walnuts are commonly used in snack foods and as an ingredient in a veriety of processed foods, such as bakery and confectionary products. For those who are allergic to those nuts, consuming them can lead to reactions ranging from dermatitis to deadly anaphylactic shock. Researchers at the University of California, Davis in conjunction with Florida State University have identified specific amino acid sequences in walnut and cashew proteins that produce allergic reactions in humans.

Application area

Test for cashew and walnut allergies
Generate vaccines for patients with nut allergies
Development of genetic modifications of the proteins in cashew and walnut plants to generate hypoallergenic plants.

Advantages

Greater sensitivity than previous methods
Provides well defined reagents for testing and vaccinations would reduce the reisk of side effects.
Increase the reliability of allergy tests
Hypoallergenic nuts would lessen health risk to allergy sufferers and reduce potential liability of food processors.

Institution

University of California, Davis

Inventors

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