

## **Definition of immunogenic carbohydrate epitopes**

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Carbohydrates are known as sources of immunological cross-reactivity of allergenic significance. In celery, the major allergen Api g 5 is recognised by antisera raised against anti-horseradish peroxidase and by patients' IgE which apparently bind carbohydrate epitopes. Mass spectrometric analysis of the tryptic peptides and of the N-glycans showed the presence of oligosaccharides carrying both xylose and core  $\alpha$ 1,3-fucose residues. Such fucose residues are also a feature of invertebrates: genetic and biochemical studies on the fruitfly *Drosophila melanogaster* and the nematode worm *Caenorhabditis elegans* indicate that these organisms possess core  $\alpha$ 1,3-fucosyltransferases – in these cases a “plant-like” oligosaccharide is expressed in the neural system. The fucosyltransferases from both fly and worm are responsible *in vivo* and *in vitro* for the synthesis of N-glycans which cross-react with anti-horseradish peroxidase; thus, we can consider these enzymes as useful tools in generating standard compounds for testing cross-reactive carbohydrate epitopes of allergenic interest. These studies are within the context of the group's expertise and interest in collaborations in the fields of glycan analysis, cloning and expression of glycozyme cDNAs, characterisation of native and recombinant glycosyltransferases, and *in vitro* re-creation of allergenic glycan epitopes.

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