



The Chinese University of Hong Kong
Non-confidential Abstract of Technology Disclosure

Title:

Epitope identification and modification for reduced allergenic activity in proteins targeted for transgenic expression

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Inventor(s):

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Patent Status:

US Patent Pending

Non-confidential abstract:

Disclosed is a method for identification of key amino acids in plant proteins critical in generating allergenic activity through mapping the epitope(s) harboring human IgE binding activity. The identified epitope(s) are then modified by amino acid substitution preferably by alanine substitution, for reduced or negative IgE-binding activity. A plant gene expression system comprises the DNA constructs placed operably under the control of a promoter sequence that confer seed-specific expression is also disclosed for the expression of the modified proteins. To demonstrate this invention, the Brazil nut 2S sulfur-rich protein was used as an example. The invention is particularly useful for the production of dietary proteins with improved nutritional quality and reduced or negative allergenicity for human and animal consumption through genetic engineering.

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