

Food Allergens: Is There a Correlation between Stability to Digestion and Allergenicity? - DTU Orbit (09/11/2017)

Food Allergens: Is There a Correlation between Stability to Digestion and Allergenicity?

Food allergy is a major health problem in the Western countries, affecting 3-8% of the population. It has not yet been established what makes a dietary protein a food allergen. Several characteristics have been proposed to be shared by food allergens. One of these is resistance to digestion. This paper reviews data from digestibility studies on purified food allergens and evaluates the predictive value of digestibility tests on the allergenic potential. We point out that food allergens do not necessarily resist digestion. We discuss how the choice of in vitro digestibility assay condition and the method used for detection of residual intact protein as well as fragments hereof may greatly influence the outcome as well as the interpretation of results. The finding that digests from food allergens may retain allergenicity, stresses the importance of using immunological assays for evaluating the allergenic potential of food allergen digestion products. Studies assessing the allergenicity of digestion products, by either IgE-binding, elicitation or sensitizing capacity, shows that digestion may abolish, decrease, have no effect, or even increase the allergenicity of food allergens. Therefore, the predictive value of the pepsin resistance test for assessing the allergenic potential of novel proteins can be questioned.

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Authors: Bøgh, K. L. (Intern), Madsen, C. B. (Intern)

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