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## ASSESSMENT OF STABILITY AND ALLERGENICITY OF FOOD ALLERGENIC PROTEINS

JH Lee, WK Yoon, SB Han, SO Yun, SH Park, HJ Lee, PS Yoon, JS Moon,  
HC Kim and HM Kim

Biopotency Evaluation Laboratory, Korea Research Institute of Bioscience  
Biotechnology (KRIBB)

The potential allergenicity of the transgene products in genetically modified organisms (GMOs), has been an important issue. As a part of the risk assessment of GMOs, we investigated the physicochemical stability and the immunogenicity of food allergens to determine their allergenicity. We have systematically evaluated the stability of food allergens in the gastrointestinal tract by using simple models of gastric (Stimulated gastric fluid) and intestinal (Stimulated intestinal fluid) digestion. Food allergens were divided into three groups in terms of their stability. Some ( $\beta$ -lactoglobulin, lectin) were highly stable to digestion for 30 min and others (peanut lectin) were moderately stable for 5 min. In contrast, casein, albumin, and ovomucoid were rapidly digested within 15 sec. We also determined the allergenicity of food allergens in Brown Norway rats and Balb/c mice. The results demonstrated that Brown Norway rats could be sensitized orally to ovalbumin allergens and Balb/c mice could be immunized intraperitoneally by ovalbumin, resulting in significant increase of IgG and IgE, respectively. Our results showed that food allergens might have diverse stability in gastrointestinal tract, although they were known to be more stable than nonallergenic proteins, and that BN rat and Balb/c mouse models could be useful as animal models for the determination of allergenicity of transgene products.

Keyword : Genetically modified organisms, allergens, stability, animal model