

World Congress on

# ALLERGY AND IMMUNOTHERAPY

May 16-17, 2018 Osaka, Japan

## Comparison of allergenicity at Gly m 4 and Gly m Bd 30K of soybean after genetic modification

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Despite rapid growth of the genetic modified (GM) crops, effective evaluations of GM on allergenicity are still lacking. Gly m Bd 30K and Gly m 4 are major allergens in soybean. Here, we compared the allergenicity between GM and non-GM soybeans with respect to the foci Gly m4 and Gly m Bd 30K. Recombinant allergens of Gly m Bd 30k and Gly m4 were generated and polyclonal antibodies raised to identify these two allergenic components in soybeans. GM soybean was first PCR-confirmed using 35S-promoter. A total of 20 soybeans (half GM, half non-GM) obtained from food market were used to assess their allergenicity based on IgE-binding and histamine release. The results showed most soybean-allergic patients showed IgE-positive reactions to the allergen of 30kDa in molecular weight. An increase in the transcription of both the Gly m4 (stress-induced protein SAM22) and Gly m Bd 28K (soybean allergen precursor) was found after GM. The protein concentrations of Gly m4 and Gly m Bd 30K increased only slightly in GM soybeans, but with no statistical significance in the tests of IgE binding and histamine release. In conclusions, soybeans showed similar concentrations of Gly m Bd 30K and Gly m4 regardless of genetically modified or not. The allergenicity of both Gly m Bd 30K and Gly m4 were therefore not altered after genetic modification. Patients showing hypersensitivity to soybeans and who had pre-existing allergy to birch pollen and cow milk casein might not further increase their allergic reactions following exposures to the GM soybeans.

### Biography

En-Chih Liao is an Assistant Professor in Mackay Medical College, New Taipei City, Taiwan. He has received his PhD from National Yang-Ming University, Institute of Clinical Medicine, Taipei, Taiwan. His specialty includes field of microbiology, basic and clinical immunology, tropical medicine and translation medicine. His research interest focuses on the house dust mite allergen characterization, animal model of bronchial asthma and biomedical wafer of diagnostic development. He was also awarded with special honor in Seoul International Invention Fair (2011) and 11th National Innovation Award (2014), etc.

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