



POSTER PRESENTATION

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Identification of IgE-binding proteins in buckwheat

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From 5th International Symposium on Molecular Allergology (ISMA 2013)
Vienna, Austria. 6-7 December 2013

Background

Buckwheat (*Fagopyrum esculentum*) is not only common pseudo-cereal in Japan, Korea, and other East Asian countries, but also a health food and substitute for wheat flour in Western countries. Buckwheat allergy is an immunoglobulin E (IgE)-mediated hypersensitivity manifesting as severe and critical symptoms induced by ingestion or inhalation of even a small amount of the flour or food products. It is therefore important to identify buckwheat IgE-binding proteins and clarify the mechanism of buckwheat allergy for developing an accurate diagnostic procedure and safer immunotherapy.

Methods

The comprehensive IgE-binding proteins in buckwheat were examined using immunoproteomic techniques. Salt-soluble proteins were extracted from buckwheat seeds and seedlings, separated using one- and two-dimensional electrophoresis, and analyzed using western blotting with buckwheat-allergic patients' sera or rabbit polyclonal antibody specific to buckwheat allergen.

Results

Immunoproteomic analysis revealed multiple IgE-binding proteins containing known or putative allergens in buckwheat. Some spots were identified as 13S globulin protein subunits or isoforms. Some spots that were homologous to vicilin-like proteins indicated the presence of newly identified vicilin-like proteins in buckwheat.

Conclusion

The results obtained from an immunoproteomic analysis may contribute to the construction of a comprehensive IgE-binding protein map of buckwheat and the detection

of isoforms of IgE-binding proteins in buckwheat variants.

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Published: 17 March 2014

doi:10.1186/2045-7022-4-S2-P13

Cite this article as: Satoh et al.: Identification of IgE-binding proteins in buckwheat. *Clinical and Translational Allergy* 2014 **4**(Suppl 2):P13.

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