

Inhibition of Food-Allergic Reactions by NaCl

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Summary

The model systems of various bread has been created and examined for the purpose of development of anti-allergy bread. Consequently, control or disappearance of antigen activity was checked by the interaction of gluten and the allergen in a chicken egg (mainly ovomucoid). Moreover, although the existence of a salt content newly checked the fact of having affected it greatly, as an important ingredient which determines disappearance of antigen nature, for details, it does not inquire. Then, this research created the model system of the time of dough formation, or baking bread, set it as the main purpose to pursue whether it is the thing which salt makes control antigen activity in those systems, combined, and was considered from various angles about the interaction of allergy induction protein and NaCl. As a means to pursue the control effect of the allergy activity of NaCl, NaCl addition, additive-free dough, and the model system of baking bread were created, and allergy activity was measured about the sample which extracted allergy induction protein from these samples using the single radial immunodiffusion method and the ELISA method. Moreover, the allergy activity of a sample which separated and refined allergen by affinity chromatography using the trypsin-immobilised affinity column was measured after extracting crude protein from dough and baking bread. As a result of measuring the allergy activity of the crude protein extracted from dough or its baking bread, the control effect of the allergy activity of NaCl was accepted in the NaCl addition dough or its baking bread. The other hand, the NaCl additive-free case, neither dough nor its baking bread has checked the control effect of allergy activity. In the control effect of the allergy activity of NaCl, the control effect showed up notably with extension of dough fermentation time. The allergy induction protein of dough or baking bread was ovomucoid added at the time of dough adjustment. The tendency which high-polymerizes ovomucoid of the NaCl addition dough with extension of fermentation time was checked. It was imagined as what antigen activity controlled by probably receiving a certain action in the molecular structure of ovomucoid by NaCl. It turns out in this experiment that NaCl has the action which makes allergy activity control clearly. It is necessary to combine with the interaction of NaCl and ovomucoid, and to pursue in detail about the control mechanism of allergy activity from now on. The study thus offers important finds for the immunology of food science.