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# Effect of Amino Acid Hybrid Type Salt on Composition and Biological Activity Profile of Fermented Foods

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Summary

In Japan, where an estimated 40 million people suffer from hypertension including latent patients, excessive salt intake is a major health concern directly related to health risk. As the awareness that "Japanese people should reduce salt intake because they consume too much salt" has spread widely throughout society, many health-conscious households have begun to avoid high-sodium fermented foods, which has become a major issue for the future of the fermented food.

On the other hand, too much salt reduction is inconsistent with the enjoyment of food, as it leads to less flavor. Against this backdrop, we have developed an amino acid hybrid type salt that can reduce NaCl by 25% without compromising on taste, using seabed spring water. We intend to apply this amino acid hybrid type salt, which is tasty and low in NaCl, as an ingredient in various fermented foods to help develop fermented foods that can be enjoyed by people who are concerned about NaCl intake. Therefore, the objective of this study was to clarify the effects of amino acid hybrid type salt on fermented foods by evaluating metabolite and biological activity profiles, and to obtain information that will lead to the development of fermented foods that can be consumed without concern for salt content.

In this study, miso was produced using purified salt, amino acid hybrid type salt, and purified salt + amino acid hybrid type salt, and the metabolite profiles of the metabolites in each miso obtained were compared, confirming the findings of previous studies that the metabolite profiles of miso differ greatly depending on the salt used. In addition, we conducted metabolome analysis to examine changes in the content of anti-stress components and angiotensin-converting enzyme (ACE: enzyme responsible for hypertension) inhibitory active components contained in miso, which we have discovered in our previous research.

Furthermore, to gain insight into the functionality of the miso produced as described above, we fractionated each miso extract and examined the profile of changes in histone modifications.

These results suggest that changing the salt used causes changes in the profiles of components and activities in miso. In the future, we will continue to purify and identify the components that cause these changes and attempt to elucidate the new functionality of miso.