



Effect of high temperature treatment on amino acid residues in soy protein isolate

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Abstract

High temperature treatment (100~150 °C) is frequently used for preparation of long-term storage foods such as retort pouched and canned foods. Consumption of the long-term storage foods has increased in the world. However, little is known for chemical changes on amino acid residues in protein by high temperature treatment. Aim of this study was to detect chemical changes on amino acid residues in a soy protein isolate (SPI) by heating in an autoclave. The heat treatment significantly decreased amino acid contents of SPI, while it did not change the nitrogen content. These facts indicate that some parts of amino acid residues in SPI are degraded and changed to other nitrogen compounds by the heat treatment. LC-MS/MS analysis of HCl hydrolysate revealed that some new amino compounds were generated by the heat treatment. The heat treatment also affected SEC elution profiles of the enzymatic digests of the SPI. These facts indicate that new indigestible peptides were generated by the heat treatment. Identification of the high temperature-induced nitrogen compounds and indigestible peptides is currently in progress.



Biography:

Mami Yamada obtained her master's degree in human culture from the Prefectural University of Hiroshima in 2015. She finished her doctor's degree from Kyoto University in 2018, and got her PhD in agriculture from Kyoto University in 2020. She became an assistant professor at Nara Women's University.

Speaker Publications:

1 Asai cube L-functions and the local Langlands correspondence Article Jun 2020 DOI: 10.1016/j.jnt.2020.05.023 ISBN: 0022-314X

[19th World Congress on Nutrition and Food Chemistry](#)
September 23-24, 2020 Webinar

Abstract Citation:

Mami Yamada, Effect of high temperature treatment on amino acid residues in soy protein isolate, Nutri-food chemistry 2020, 19th World Congress on Nutrition and Food Chemistry September 23-24, 2020 Webinar

(<https://nutrition-foodchemistry.insightconferences.com/abstract/2020/effect-of-high-temperature-treatment-on-amino-acid-residues-in-soy-protein-isolate>)