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Title: Examining the potential effect of probiotic bacteria in reducing acrylamide

Session: Advances in Mass Spectrometry for Traditional Medicine and Natural Product Research

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Introduction

Acrylamide is one of the process-induced contaminant formed during Maillard browning reaction. The presence of this toxicant in food products arose the public health concern due to its carcinogenicity. Different studies have evaluate the potential strategies to reduce acrylamide in foods. In this study, the new approach to reduce acrylamide by addition of probiotic bacteria was investigated.

Methods

Bifidobacterium and *Lactobacillus* bacterial strains were assessed in their ability to reduce acrylamide. The content of acrylamide in samples with or without probiotic was extracted and analyzed by Liquid chromatography–mass spectrometry with solid phase extraction (SPE) clean-up.

Results

Different probiotic strains were selected for investigating acrylamide-reducing properties. The findings showed that the acrylamide content in food samples were reduced after incubation with different probiotic strains. *Lactobacillus acidophilus* and *Bifidobacterium longum* showed highest acrylamide-reduction percentage in the selected strains. The results demonstrated that the acrylamide-reducing capacity of selected probiotic strains was different under different food matrix, probably caused by different food composition and processing treatment.

Novel Aspect

The use of LC-MS is an effective tool to determine acrylamide content and study acrylamide-reducing capacity of various probiotic bacteria in diet.