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Siu Mei, Emily Choi

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Evaluation of the efficacy of probiotic bacteria in reducing food toxicants

Dr. Emily Siu Mei Choi¹ and Dr Ivan Chu²

¹Faculty of Science and Technology, Technological and Higher Education Institute of Hong Kong, Hong Kong,
dremilychoi@thei.edu.hk

²Department of Chemistry, The University of Hong Kong, Hong Kong, ivank@hku.hk

Dr. Emily Siu Mei Choi

Abstract: Short Description of what will be discussed during the presentation (about 250 - 500 words)

Ethyl carbamate (EC), one of the process-induced food toxicants, usually formed in alcoholic beverages and fermented food products. Different methods have been developed to reduce the level of toxicants in food products. In this study, the potential synergistic effects of selected probiotic formulas to reduce EC was investigated. Five selected probiotics, *Lactobacillus bulgaricus*, *Lactobacillus paracasei*, *Lactobacillus plantarum*, *Bifidobacterium lactis*, and *Streptococcus thermophilus*, were incubated with different levels of EC chemical solutions to examine its EC reducing capacity. Three probiotics with higher efficacy on EC reduction under 10^8 CFU/mL cell concentration were selected for probiotic formulas. The probiotic formulas were incubated with (i) standard chemical solutions, (ii) selected wine samples (yellow wine, sake and plum wine) as well as (iii) in-vitro digestion model to evaluate the reduction of EC. LC-MS was used to analyse levels of EC of samples. Synergistic effect of the probiotic formula was only observed in some selected wine samples and the reduction percentage of EC by a combination of *Lactobacillus bulgaricus* and *Lactobacillus plantarum* is significantly higher ($p < 0.05$) than that by single strain of *Lactobacillus plantarum* and *Lactobacillus paracasei*.