



Vocational Training Council
VTC Institutional Repository

Faculty of Science & Technology (THEi)

Faculty of Science and Technology

2023

Evaluation of the efficacy of probiotic strains in reducing ethyl carbamate

Siu Mei, Emily Choi

Follow this and additional works at: <https://repository.vtc.edu.hk/thei-fac-sci-tech-sp>

Thei

Member of VTC Group
VTC 機構成員

Please note that the maxi words for title, author, abstract and bio altogether are 450. And please kindly return your abstract to the committee side in word version only. Thank you.

Title: Evaluation of the efficacy of probiotic strains in reducing ethyl carbamate

Dr. Emily Siu Mei Choi* and Dr Ivan Chu

Assistant Professor

Technological and Higher Education Institute of Hong Kong (THEi)

Hong Kong

Abstract

In this study, probiotic approach to reduce ethyl carbamate in (1) ethyl carbamate chemical solution, (2) selected alcoholic drinks: sake, yellow wine and brandy and (3) selected alcoholic drinks in vitro digestion model were studied. Five probiotic strains: *Lactobacillus acidophilus*, *Lactobacillus rhamnosus*, *Bifidobacterium longum*, *Bifidobacterium lactis* and *Lactobacillus casei Shirota* showed the ability to reduce ethyl carbamate. *L. rhamnosus* (19.81-54.98%) and *B. longum* (19.25-51.34%) showed significant reduction ability at 100, 200, 400 and 700 ng/mL ethyl carbamate chemical standard solution. *L. rhamnosus* and *B. longum* were further incubated in alcoholic beverages with or without in vitro digestion. The result revealed that probiotic strain, ethyl carbamate concentration and pH were important factors affecting the ethyl carbamate reduction ability. This may suggest that the incorporation of probiotic can be a potential and novel way to decrease bioaccessibility of ethyl carbamate in wine. Further study on the potential synergistic effect of probiotic formula was also conducted.

Biography

Emily Siu Mei Choi Assistant Professor of Faculty of Science and Technology, Technological and Higher Education Institute of Hong Kong (THEi), Hong Kong. She received her Bachelor's degree in Food Science and Nutrition from the University of Hong Kong. She obtained Master of Food Safety and Toxicology as well as PhD in Food Science from the University of Hong Kong. She had conducted research in various areas such as plant food protein, process-induced food toxicants and the potential application of probiotics in food safety.