

Probing the Relationship between Gut Microbiota and Over-Consumption of Energy Based on High Dietary-Fiber Diets

By Dr Xichun Peng

Abstract

Gut microbes have been found to be related with the hosts' energy intake, and they are believed to be associated with the formation of obesity. This study indicated that normal rats gained more BW than obese ones from both the HSF and HFOS diet; the alteration of gut microbiota was modulated by the diet composition and its energy content; that is, the microbial shift was the result of obesity, but not the reason of obesity. In addition, when the rats continuously ingested HFOS diet, the abundance of gut *Bifidobacterium* could not keep in high level.

About the speaker



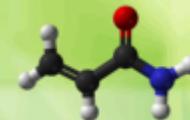
Dr Xichun Peng mainly focus on the interaction of food components (especially Chinese herb medicine) and gut microbiota, then on gut health or even body health. His current research support includes Chinese national government, Guangdong Province government and Guangzhou City government.

Host: A/P Huang Dejian
Date: 29th January 2016 (Friday)
Time: 10am – 12noon
Venue: Seminar Room S16-04-30

All are welcome!

Effect of chlorogenic acid on the formation of acrylamide and HMF, and the adducts formed with amino acids

By Dr Shiyi Ou



Abstract

Acrylamide and HMF are two food contaminants formed in high-temperature processed foods. Different antioxidants, or even different concentration of the same antioxidant, show contradictory effect on acrylamide formation, which has been regarded as "Antioxidants Paradox". Chlorogenic acid (CGA) is a phenolic antioxidant ubiquitously exists in food stuffs. The phenol type of CGA increased, whereas its quinone one inhibited the formation of acrylamide and HMF. Phenol CGA increased acrylamide formation through promoted deamination of 3-APA, and HMF formation, which has been proved to react more efficiently with asparagine to form acrylamide. Quinone of CGA reacted with the amine-containing compounds (the precursors of acrylamide), thus decreased acrylamide formation. CGA increased HMF formation both in model reaction system and fruit juices. Its possible mechanisms are through increasing 3-DG formation and its conversion to HMF, and inhibiting HMF elimination. Both of its di-hydroxyphenyl and carboxyl groups in CGA function in increasing HMF formation.

Free amino acids are food components, some of them are incorporated into food stuffs as supplementary ingredients or using as inhibitors of acrylamide. However, they easily form adduct with acrylamide or HMF. The destination and toxicological effect of these adducts after intake present our further consideration.

About the speaker



Shiyi Ou (PhD) is professor in the Department of Food Science and Engineering at Jinan University, Guangzhou, China. Professor Ou gained his PhD degree in food science at South China University of Technology in 1998; and worked as a visiting scholar in the Polytechnic University of Hong Kong during 2001-2002, in North Dakota State University during 2011-2012. In 2011, he obtained Science and Technology Achievement Award from the government of Guangdong Province. His research interests focus on two aspects: functional foods and food contaminants formed in the high-temperature processed foods. To his credit, Professor Ou has over 200 publications, including 51 articles published on the international journals, which have a total citation over 1600 times (H index 19). He is editorial member of two famous journals in China: Journal of Chinese Institute of Food Science and Technology, and Modern Food Science and Technology.