

# 17<sup>th</sup> GLOBAL DIETICIANS AND NUTRITIONISTS ANNUAL MEETING

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## Elevated ethanol levels in intestine and tissues of rats by intake of fructooligosaccharides

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Prebiotics such as fructooligosaccharides (FOS) and inulin are well known to enhance intestinal fermentation. Dietary FOS has a resistance to digest in stomach and small intestine. After reaching the cecum and colon, FOS is metabolized by the intestinal bacteria to short-chain fatty acids (SCFAs). In addition, previous study suggested the intestinal microflora produce ethanol from glucose or FOS in cell culture and animal experiments. However, there is no study on the effect of diets on the production of ethanol in the intestine. Several epidemiological studies have suggested low intake of ethanol causes beneficial effects, whereas high intake of ethanol causes harmful effects. Thus, we hypothesized that consumption of FOS elevates ethanol production in the intestine. This study was conducted to examine the influence of consumption of 10% FOS diet for 2 weeks on the ethanol levels in intestinal digesta and several tissues of SD rats. As a result, FOS intake markedly increased the concentrations of ethanol in the digesta of ileum, cecum and colon ( $P < 0.05$ ). Interestingly, the ethanol concentrations in colon tissue, liver, lung and kidney were also markedly increased by FOS intake ( $P < 0.05$ ). Meanwhile, the concentrations of ethanol in serum, heart and brain were unaffected. This study provided the first evidence suggesting dietary prebiotics is able to elevate intestinal production of ethanol, leading to an impact for health.

### Biography

Masahiro Yamaguchi is a graduate student of Biosphere Science, Hiroshima University, Japan. He is studying molecular nutrition especially, protease derived from *Aspergillus oryzae* which is prebiotics widely used for Japanese food.

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