



Category: Metagenomics

Effect of rice beer on gut bacteria

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Abstract

The human gut is colonized by trillions of bacteria, called microbiota influences human health and is effected by several host factors. The studies in humans and model organisms have clearly demonstrated that out of several important factors, diet has the most dominant role in regulation of the gut microbiota. Additionally, with an increase in the knowledge on the microbiota, the connections between microbial actions on dietary consumption are being revealed. Consumption of fermented beverages holds a long tradition and accounts for approximately one-third of the human diet globally. In various societies, fermentation has not only been well established as a process for food preservation, human nutrition, traditional medicine and culture but also for the improving the sensorial characteristics, such as texture, flavor and aroma and most importantly for the magnification of the nutritional values. Consumption of rice beer is an essential part of the socio-cultural life of several tribes of North-East India. It is believed to be effective against several ailments such as ameboiosis, acidity, vomiting and has health modulating effects including cholesterol reduction and endocrine function. Effect of rice beer was tested on mice model. 17 healthy Swiss albino mice were taken for the study and divided into two groups: control and treated. Rice beer was fed to the treated group once daily and fecal samples were collected. Metagenomic DNA from stool samples was extracted and V₆- V₈ region of the 16S rDNA gene was amplified, followed by Denaturing Gradient Gel Electrophoresis (DGGE).The DGGE gel was scored using GelCompar II software. Gas Chromatography Mass Spectrometry (GCMS) analysis of stool samples was also carried out. Multidimensional scaling (MDS) plot of the DGGE profiles showed distinct clustering of control and treated groups, indicating the effect of rice beer consumption on gut microbes.

References

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