
一般講演 | B 食品機能 (Food Function)

[3Fa] 抗腫瘍、抗炎症、その他食品機能

座長:宮崎 義之(九州大学)、小暮 更紗(城西大学)、矢部 富雄(岐阜大学)

2024年8月31日(土) 09:00 ~ 11:30 F会場 (3F N306)

10:00 ~ 10:15

[3Fa-05] Study on detoxification of benzo[a]pyrene by lactic acid bacteria

*KIM DOYI¹ (1. 成均館大・院・食品生命工)

キーワード：乳酸菌、ベンゾ[a]ピレン、解毒、イン・ビボ、マウス

[Purpose]

Benzo[a]pyrene is a group I carcinogen by the International Agency for Research on Cancer(IRAC). It is detected during smoking, food cooking, as well as natural environments such as air, surface water, and soil. Humans are constantly exposed to benzo[a]pyrene. Lactic acid bacteria are gram positive microorganisms and beneficial health promoting effect including regulation of metabolism and gut microbiota. And some lactic acid bacteria have the ability to bind and detoxify toxins by physical binding. Therefore, humans are constantly exposed to benzo[a]pyrene lifetime, the aim to study is to determine the removal of benzo[a]pyrene by lactic acid bacteria for an environmentally friendly and cost-effective approach.

[Methods]

High performance liquid chromatography (HPLC) is used to determine the binding rate of benzo[a]pyrene and 11 lactic acid bacteria isolated from grains. An *in vivo* experiment is conducted to evaluate the detoxification effect of selected lactic acid bacteria. C57BL/6N mice are widely used in toxicology and administered orally lactic acid bacteria and benzo[a]pyrene (50mg/kg). The level of damage of liver cells is evaluated liver function and kidney function in the blood. The histopathological characteristics of the ileum and colon are determined the incidence of colonic necrosis. Using fecal samples from mice, SCFA levels and gut microbiota diversity related to the composition of intestinal microorganisms are analyzed.

[Results]

Binding ability of *Levilactobacillus brevis* RP21, *Pediococcus pentosaceus* K22, and *Pediococcus pentosaceus* K25 was much more than other strains binding ability.