

25th WORLD CANCER CONFERENCE

October 19-21, 2017 | Rome, Italy

Inhibitory effect of *Lactobacillus helveticus* SBT2171 on the growth of colon carcinoma cells and the novel action mechanism

Kazunobu Baba

Hokkaido University, Japan

Lactobacillus helveticus SBT2171 (LH2171; provided by Megmilk Snow Brand Co., Ltd.) is a lactic acid bacterium that inhibits excessive immune responses. We have revealed that LH2171 shows inhibitory effects on the proliferation of BJAB, a B lymphoma cell line, through reduction of phosphorylation level of c-Jun, a critical regulator of cell proliferation. c-Jun is phosphorylated by activation of MAPKs (Mitogen-activated protein kinases) - (JNK and ERK) signaling pathway. JNK (Jun N-terminal kinases) and ERK are activated by MEK4/7 or MEK1/2 pathway, respectively. In this study, we investigated the effect of LH2171 on the proliferation of MC38, a mouse colon carcinoma cell line and HT-29, a human colorectal adenocarcinoma cell line. LH2171 inhibited the proliferation of both MC38 cells and HT-29 cells. As a result of assay for the phosphorylation of factors regulating cell growth, LH2171 inhibited phosphorylation of JNK, but not of ERK and MEK4 in MC38 cells. In addition, LH2171 induced the expression of JNK-inactivating phosphatase, MKP1 and MKP1 siRNA treatment could suppress the effect of LH2171 to inhibit cell proliferation. These results indicate that the inhibitory effect of LH2171 on the proliferation of MC38 cells depends on the induction of MKP1 to inhibit JNK activity.

Biography

Kazunobu Baba has completed her PhD from Kwansai Gakuin University. She is a Postdoctoral Fellow of Institute for Genetic Medicine in Hokkaido University. She has been studying the function and roles of probiotics to apply the study in prevention and treatment of cancer. She has once received Paper of the Week on *Journal of Biological Chemistry*.

k-baba@pop.med.hokudai.ac.jp

Notes: