

Abstract

Lactic Acid Bacteria Mediated Apoptosis Induction: Natural Way of Colon Cancer Cells' Inhibition [†]

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Abstract: Lactic acid bacteria, one of the members of human microbiome and gut microbiota, are known for their anti-carcinogenic properties. Apoptosis is a programmed cell death that can be named as “cell suicide”. This physiological process has critical role in cancer treatments due to tumor formation is the result of the loss of apoptosis ability of the normal cells. Lactic acid bacteria mediated cancer treatment is related to the apoptosis induction in the cancer cells. In this study, we aimed to show the apoptotic effect of lactic acid bacteria named as *Lactobacillus plantarum* (responsible for plant based fermentations and probiotic bacteria) and *Lactobacillus rhamnosus* NRRL B-442 (probiotic bacteria and use in some specific dairy fermentations) in human colon adenocarcinoma cell line HT-29. Apoptosis was determined two different methods: Acridine Orange-Ethidium Bromide Microscopic and Annexin V-Propidium Iodide Flow Cytometric assays. In flow cytometric assay necrosis was not detected. Results showed that the lactic acid bacteria used in the study led to apoptosis in HT-29 which is a colon adenocarcinoma cell line.

Keywords: apoptosis; *Lactobacillus plantarum*; *Lactobacillus rhamnosus* NRRL B-442



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