

Effects of *Lactobacillus plantarum* A7 with probiotic potential on colon cancer cell proliferation in comparison with a commercial strain

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Several beneficial effects have been attributed to the probiotic lactic acid bacteria. It was determined that lactobacilli can exert antiproliferative effects on the various cancer cell lines specially colon cancer. Effects of lactic acid bacteria on colon cancer may vary from strain to strain and there is a need to find the new probiotic strains with tumor suppressing properties through in-vitro studies. Antiproliferative activities of heat-killed cells and cell-free supernatants of a native strain of *Lactobacillus plantarum* A7 and a commercial strain of *Lactobacillus rhamnosus* GG were assessed on human colon cancer cell line (Caco-2) using MTT assays. Heat-killed cells and cell-free supernatants of both strains inhibited the growth of Caco-2 cells through a dose dependent manner. This suggested that antiproliferative effect may not be an exclusive characteristic which is dedicated to officially approved probiotics. In consistent with other reports of lactobacilli, *L. plantarum* A7 could be considered as colon cancer biological product, most likely due to its advantages in significant organic acid production.

Keywords: Probiotics; *L. plantarum* A7; Colon cancer; Caco-2 cells; Lactic acid bacteria; MTT assay