

# In vitro cytotoxic activity of probiotic bacterial cell extracts against Caco-2 and HRT-18 colorectal cancer cells

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## Abstract

This research aimed at screening the anti-cancer activity of cell extracts of forty potential probiotic bacterial isolates against 2 colorectal cancer (CRC) cell lines (namely, Caco-2 and HRT-18), and vero cells using 3-(4, 5-dimethylthiazolyl-2)-2, 5-diphenyltetrazolium bromide (MTT) and Trypan Blue assays (TBE). Results demonstrated that 2 isolates (*Lactobacillus acidophilus* LA102 and *Lactobacillus casei* LC232) showed pronounced cytotoxic activities, with proliferation inhibition of 37% and 68.5% of LA102, and 48% and 45.7% of LC232 against Caco-2 and HRT-18, respectively, at a concentration of 100 µg extract/ml. The IC<sub>50</sub> values of the cytotoxic activity were 1.6 and 2.5 µg/ml of LA102, and 15.4 and 6.2 µg/ml of LC232 against Caco-2 and HRT-18, respectively. At the same time, results showed that LA102 and LC232 isolates had no cytotoxic effect on the normal vero cells. Even though these observations raise the prospects of using these probiotic isolates for possible cancer prevention and even treatment, yet further investigation is needed to ascertain their potential to prevent *in vivo* human CRC.

**Keywords:** Probiotic; colorectal cancer; Lactic acid bacteria, *Lactobacillus*; MTT; cytotoxicity.