

عنوان مقاله:

Molecular detection of heat-killed probiotic bacteria and study of apoptosis induction on colon cancer HT-۲۹ cell line

محل انتشار:

فصلنامه میکروب شناسی پزشکی ایران، دوره 10، شماره 2 (سال: 1395)

تعداد صفحات اصل مقاله: 11

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خلاصه مقاله:

Background and Aim: Due to the high prevalence of colon cancer in human societies such as Iran, the aim of this study is the molecular identification and assesses cytotoxic effects of heat-killed probiotic bacteria and induced apoptosis in HT-۲۹ cell lines of colon cancer compared with normal cells. **Materials and Methods:** Molecular detection was performed on local probiotic bacteria isolated (TDF) from Tarkhineh dough. Both cell lines HT-۲۹ colon cancer and HEK-۲۹۳ were affected by ۰.۰۱, ۰.۱, ۱, ۱۰, ۱۰۰, and ۱۰۰۰ µg/ml of heat-killed TDF isolate for periods of ۲۴, ۴۸, and ۷۲ hours. Cell viability was measured using MTT assay. DNA fragmentation assay was performed after ۴۸ and ۷۲ hours base on the IC_{۵۰} concentration of heat-killed bacteria. **Results:** TDF isolate was submitted lactobacillus berevis in GenBank. According to MTT assay, lactobacillus berevis depended on time and dose reduced survival and proliferation of colon cancer of HT-۲۹ cell line, with the highest cytotoxic effect in ۱۰۰۰ µg/ml for ۷۲ hours. At this dose and time, viability was ۲۳% and ۵۰% in HT-۲۹ and HEK-۲۳۹ cell lines, respectively. DNA fragmentation assay showed apoptosis induction by heat-killed bacteria in the HT-۲۹ cell line. **Conclusions:** L.berevis showed cytotoxic effects and induced apoptosis on HT-۲۹ colon cancer cell line while the cytotoxic effect was slight on HEK-۲۳۹ compared to HT-۲۹. Future studies are still required to confirm these bacteria as a biological anti-cancer product in treatment and prevention.

کلمات کلیدی:

Probiotic, Lactobacillus brevis, colon cancer, apoptosis, HT-۲۹ cell line
پروبیوتیک، لاکتوباسیلوس برویس، سرطان کولون، آپوپتوز، رده سلولی HT-۲۹

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