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EVALUATION OF THE ANTIPROLIFERATIVE ACTIVITY OF PROBIOTIC KEFIR IN CANCER CELLS LINES

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Introduction: Healthy lifestyle habits and an adequate diet can be an essential factor in the prevention and treatment of various diseases. The use of probiotics has been increasing in the world, mainly because of the positive impact in the treatment of intestinal diseases and several types of cancer. Kefir is a probiotic produced through the fermentation of milk and during this process produces a variety of bioactive compounds, such as acetic and lactic acids, bioactive peptides and bactericides that can be beneficial to health. Studies have shown anticancer action in intestinal cancer cells. The aim of the study was to evaluate the antiproliferative activity of kefir extract in several cancer cell lines. **Methods:** Pasteurized milk was inoculated with kefir grains for 48 hours and then filtered to remove the grains. The filtrate was centrifugated for the removal of bacteria sans yeasts. The supernatant was passed through a 0.22 µm filter for cells treatments. The antiproliferative activity was analysed using MTT assay with 3 human cancer cell lines: HT-29 (colorectal adenocarcinoma), HepG2 (hepatocarcinoma) and MCF-7 (breast adenocarcinoma); and one non-cancer cell line MRC-5 cell line (normal human fibroblasts). The treatment with kefir extract at the concentrations of 10, 50, 100 e 200 µg/mL was realized for 72 hours in an appropriate incubator. **Results:** Treatments presented significant dose-dependent antiproliferative activity against all studied cancer cell lines, with a greater effect on the colorectal adenocarcinoma cell line, reducing cell viability in 97% at the highest tested dose. The extracts were non-cytotoxic against the non-tumor fibroblast cell line. **Conclusion:** It was evident that kefir has anticancer action, mainly in intestinal cancer cells. Further studies should be carried out to identify its mechanism of action and its bioactive compounds responsible for this activity.

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