

عنوان مقاله:

Anticancer Effect of Bovine Lactoferrin on Human Esophagus Cancer Cell Line

محل انتشار:

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خلاصه مقاله:

Background: Lactoferrin (Lf) is a glycoprotein, a member of the transferrin family. From ten known mechanisms of anti-cancer chemoprotective compounds, Lf alone, has six of these functions and inhibits cancer. In this study, the effect of lactoferrin purified from bovine colostrum was studied as an anti-cancer agent on esophageal cancer cell line. Materials and Methods: Bovine colostrum were collected immediately after giving birth. At first, the fat, casein, and some of the milk proteins were removed. Then, lactoferrin was purified using CM-Sephadex-C50 cation exchange chromatography by FPLC system. Purified lactoferrin with 80 kDa molecular weight and 2mg/ml concentration was obtained. Esophageal cancer cell line KYSE-30 and normal cell line HEK were cultured. After appropriate confluency, different concentrations of Lf were added to KYSE-30 and HEK for 20 h and its anti-cancer effect was evaluated by MTT and flow cytometric methods. The maximum concentration inhibitory effect was studied at different times using MTT method. Results: MTT test determined that 500 µg/ml of lactoferrin reduced cell viability in esophageal cancer cell lines KYSE by 53% and 80% after 20 and 42 hours, respectively, but had no effect on normal cells. Also, flow cytometric analysis determined that lactoferrin was able to induce apoptosis in KYSE-30 cell line. Conclusion: The isolated lactoferrin from bovine milk showed inhibitory effect on esophageal cancer cell line whereas; it did not have any significant effect on normal cells.

کلمات کلیدی:

Anticancer effect, Bovine lactoferrin, Esophageal cancer cell line, Flow cytometry

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