

Does Milk Rich in CLA has Cytotoxicity against Cancer Cell Lines ?

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Milk samples rich in conjugated linoleic acid (CLA) were obtained from buffalos fed on special diet supplemented with olive oil and sunflower mixture (1:1) with monensin to enhance the production of that fatty acid. Three cancer cell lines, HeLa, HepG-2 and MCF-7 were obtained from Vacsera Egypt and the viability was examined by neutral red assay while, the fourth cell line, Erlich Ascites Carcinoma cells (EACC) was obtained from National Cancer Institute, Egypt and tested using Trypan blue exclusion test. Cancer cell lines were cultured and tested for their viability after incubation with special media containing milk rich in CLA.

Results showed that both normal milk as well as milk rich in CLA enhanced cell survival of the cancer cells. However, the viability of these cells was significantly reduced when lipid fractions of milk samples were used instead of the whole milk. Most of the cell lines were inhibited by 80% by these treatments. This effect may be due to the essential fatty acids of the milk in special CLA which showed pronounced inhibition of cancer cells by using lipid fraction from milk rich in CLA. This result was confirmed by decreasing viability of cancer cells when CLA was added to their media.

Data of this study clear the anticancer activity of CLA-enriched milk and milk products as a functional foods as reported in both in vitro and in vivo studies.

Key words: EACC, HeLa cells, HepG-2, MCF-7, CLA, viability, anticancer