

Anticancer Activity of Milk Fat Rich in Conjugated Linoleic Acid Against Ehrlich Ascites Carcinoma Cells in Female Swiss Albino Mice

Authors : Diea Gamal Abo El-Hassan, Salwa Ahmed Aly, Abdelrahman Mahmoud Abdelgwad

Abstract : The major conjugated linoleic acid (CLA) isomers have anticancer effect, especially breast cancer cells, inhibits cell growth and induces cell death. Also, CLA has several health benefits in vivo, including antiatherogenesis, antiobesity, and modulation of immune function. The present study aimed to assess the safety and anticancer effects of milk fat CLA against in vivo Ehrlich ascites carcinoma (EAC) in female Swiss albino mice. This was based on acute toxicity study, detection of the tumor growth, life span of EAC bearing hosts, and simultaneous alterations in the hematological, biochemical, and histopathological profiles. **Materials and Methods:** One hundred and fifty adult female mice were equally divided into five groups. Groups (1-2) were normal controls, and Groups (3-5) were tumor transplanted mice (TTM) inoculated intraperitoneally with EAC cells (2×10^6 /0.2 mL). Group (3) was (TTM positive control). Group (4) TTM fed orally on balanced diet supplemented with milk fat CLA (40 mg CLA/kg body weight). Group (5) TTM fed orally on balanced diet supplemented with the same level of CLA 28 days before tumor cells inoculation. Blood samples and specimens from liver and kidney were collected from each group. The effect of milk fat CLA on the growth of tumor, life span of TTM, and simultaneous alterations in the hematological, biochemical, and histopathological profiles were examined. **Results:** For CLA treated TTM, significant decrease in tumor weight, ascetic volume, viable Ehrlich cells accompanied with increase in life span were observed. Hematological and biochemical profiles reverted to more or less normal levels and histopathology showed minimal effects. **Conclusion:** The present study proved the safety and anticancer efficiency of milk fat CLA and provides a scientific basis for its medicinal use as anticancer attributable to the additive or synergistic effects of its isomers.

Keywords : anticancer activity, conjugated linoleic acid, Ehrlich ascites carcinoma, % increase in life span, mean survival time, tumor transplanted mice.

Conference Title : ICFPS 2023 : International Conference on Food Practices and Safety

Conference Location : Jeddah, Saudi Arabia

Conference Dates : February 20-21, 2023