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(812) **OMEGA-3 FATTY ACIDS MEDIATE IMMUNE REGULATION ANTICANCER MECHANISMS BY IL-6, 5 (S)-HETE AND ROS GENERATION IN PANCREATIC HUMAN**

CELLS

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Abstract: Pancreatic carcinogenesis is characterized by the activation of inflammatory signaling pathways. Numerous studies have demonstrated the role of essential fatty acids (EFAs) in pancreatic cancer initiation and progression, but the underlying molecular mechanisms have not been completely elucidated. Here, we studied the effects of two omega-3 EFAs, the eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) and the omega-6 fatty acid, the arachidonic acid (AA) on a human pancreatic cell line (PANC-1). We determined the release of interleukin-6 (IL-6) as inflammatory marker in supernatants from PANC-1 cultures using ELISA, as well as their gene expression by qRT-PCR. Cell viability (Rezasurin) and reactive oxygen species (ROS) production (DCFH-DA assay kit) by fluorimetry. Eicosanoids generation and lipid cell profile by High pressure liquid and Gas chromatography (HPLC and GC).We observed a significant reduction in cell viability in DHA and EPA compared to AA and control (ethanol) treatments ($P<0.05$). Moreover, we demonstrated an increased apoptotic levels in DHA and EPA treated cells in comparison with the control and AA treatment, probably mediated by ROS production ($P <0.05$). A diminution of IL-6 gene expression ($P< 0.01$) and liberation ($p< 0.02$) resulted after DHA and EPA treated cells. The release of proinflammatory eicosanoids: 13-HODE and 5(S)-HETE decreased on EPA and DHA treated cells compared with AA and control ($p<0.05$).Therefore, we demonstrated that omega-3 EFAs may reduce the growth of PANC-1 by several mechanisms that include significant increase of ROS production, diminution of lipid peroxides and down regulation of gene expression and secretion of inflammatory cytokines such as IL-6.

Keywords: pancreatic cancer, essential fatty acids, eicosanoids.

(1590) **ANTIPROLIFERATIVE EFFECT OF ESSENTIAL OIL OF *Artemisia mendozana* IN TUMOR CELLS B16F0.**

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The basic pathophysiology of cancer comprises aberrations at different points in the cell cycle. Due to the increasing incidence of cancer worldwide, there is an intense search for new therapeutic strategies to treat this disease. In this area, important efforts have been oriented to exploring the action of compounds of plant origin. *Artemisia mendozana var mendozana* (ajenjo), is a plant belonging to the Asteraceae family that growth in the piedmont of Mendoza province and it is used as a medicinal plant with antispasmodic and antifungal properties. The essential oil of ajenjo (EO) contains 28 compounds of which the higher concentrated are: artemisia alcohol 4.8%, α-thujone 5.1%, borneol 11.2% and bornyl acetate 43.7%. In this project the effect of EO was analyzed in the *in vitro* proliferation of B16F0 murine melanoma cells. For the assay the cells were cultured with vehicle DMSO (control) or 0.1- 0.25 µl / mL EO dissolved in DMSO for 72 h. The growth rate (GI) ± SE was calculated from 3 independent experiments. At 72 h of culture, the GI of the control was 6.37 ± 1.07 and with EO was: 4.57 ± 1.07 (A); 1.37 ± 0.18 (B) and 0.43 ± 0.03 (C) for 0.13, 0.2 and 0.25 µL / mL respectively. GI of B and C were significantly different to the control ($p\leq0.001$). These results show that EO, at concentrations, is a powerful inhibitor of the in vitro proliferation of B16 F0 cells.

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