BIOPHENOLS CHARACTERIZATION OF EXTRA VIRGIN OLIVE OIL EXTRACTS AND IN VITRO TEST ON A MODEL OF COLORECTAL CANCER CELLS

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Extra virgin olive oil (EVOO) is believed to exert beneficial effects against many pathological processes, including the development of colorectal cancer (CRC). It is well known that olive oil contains a variety of biophenols, which are thought to be responsible for this anti-carcinogenic effects [1]. Several studies have shown that the expression of estrogen receptor β (ERβ) is significantly reduced in colon cancer cells. To investigate the correlation between the presence of biophenols and the beneficial effects, different EVOOs have been chemical characterized and in vitro tested on a model of human colon cancer cell line HCT8-β8 [2]. Chemical characterization of extracts was performed by HPLC/DAD/MS techniques [3]; three main categories were identified (Table 1): simple phenols, secoiridoids, and lignans. Consequently, we have evaluated the in vitro effects of the EVOOs extracts (5-75 μM) and of hydroxytyrosol (OH-Tyr) standard (5-50 μM) on HCT8-β8 [4]. Both extracts have showed a biological activity on HCT8-β8 at the concentration of 25 μM, whereas OH-Tyr at 5 μM. Additionally, at the same concentration, EVOO2 has showed an anti-proliferative effect higher than EVOO1 (Table 2). In conclusion EVOOs extracts can inhibit the mitotic activity of colon cancer and it seems correlated to the biophenols concentration.


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