

Investigation of the Antitumoral Activity of Some Natural Compounds †

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Abstract: Plants represent a potential reservoir of biologically active compounds of pharmacological interest. In the current study, we investigated some plant and bee products for their anti-proliferative properties. The natural products were evaluated for their *in vitro* effects on cell growth and apoptosis at the non-cytotoxic concentration (10% propolis, 1% *Silybum sp.*, 1% *Rosmarinus sp.*, 0.1% *Chelidonium majus*, 0.05% *Glycyrrhiza sp.*, and 0.01% *Tamarix ramosissima*). The results indicated a decrease of the cells in G0/G1-phase with significant apoptosis and S-phase arrest. Prolonged exposure (72h) of the tumor cells to the plant extracts and propolis products caused caspase activation demonstrated by increased FAM-fluorescence in treated cells compared to control cells. In conclusion, cell cycle analysis of Hep-2 tumor cells showed that plant extracts are blocking the G2 phase, and the treatment of cells with plant extracts at concentrations 5 times higher than the non-cytotoxic ones, have indicated that *Tamarix ramosissima* and *Chelidonium majus*, as well as combinations of these plant, extracts induced apoptosis (sub-G0 phase) thus demonstrating their antitumor effect.

Keywords: plant extracts; anti-proliferative activity; apoptosis.

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Conflicts of Interest

The authors declare no conflict of interest.