Effects of *Thuya occidentalis* on the Lines of Androgen-Unresponsive Prostate Cancer

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**Introduction:** *Thuya occidentalis* is a plant rich in bioactive compounds such as flavonoids and coumarins and there are evidences that this compounds posses anti-proliferative and apoptotic effects in prostate cancer cells. Thus, our objective was to evaluate the effects of the *Thuya occidentalis* extract on prostate cancer cell lines, PC3 and DU145, cell cycle and viability. **Materials and Methods:** *Thuya occidentalis* extract was diluted in culture medium to final concentrations of 0.025 mL/mL, 0.050 mL/mL and 0.075 mL/mL (mL of extract/mL of culture medium) just before use. PC-3 and DU145 cells were treated with *Thuya occidentalis* for 24h. The cell viability was evaluated using 7-amino-actinomycin D (7-AAD, BD Bioscience, USA). Apoptosis was analyzed with Annexin-V FITC Conjugate Kit (Invitrogen, Carlsbad, CA, USA) and cell cycle analysis was evaluated by incorporation of propidium iodide. All tests were analyzed by flow cytometry. **Results and discussion:** Our results demonstrated that the percentage of dead cell stained with 7-AAD was significantly higher in cells treated with 0.075 mL/mL of *Thuya occidentalis* extract in PC3 cells, however no differences were found in DU145 cells. Moreover, we observed an increase in the number of cells undergoing apoptosis, late apoptosis and necrosis in both cell lines (PC3 and DU145), especially in the higher concentration of the extract (0.075 mL/mL). In the cell cycle, we observed an increase in the number of DU145 cells in G0G1-phase and reduction in the G2-phase and this increase was more pronounced at the concentration of 0.075 mL/mL. However, we did not observe differences in the cell cycle of PC3 cells. **Conclusion:** Our results suggest that the inhibitory effect of *Thuya occidentalis* extract on PC3 and DU145 cells was promoted by the reduction on viability probably via G0G1 cell cycle arrest and/or citotoxicity observed with a consequent increase in apoptosis and necrosis.


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