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SYNTHETIC CHALCONES CYTOTOXIC ACTIVITY ON EHRLICH ASCITIC TUMOR CELLS (MURINE BREAST CANCER)

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Breast cancer is the world leading cause of women death. The chemotherapy has presented several side effects and many cases of chemo-resistence. Thus, research of new antineoplasic molecules with less aggressive effects is necessary. Chalcones have demonstrated extensive pharmacological potential including antineoplasic. **Objective:** The aim of this study was to evaluate *in vitro* cytotoxic effect induced for synthetic chalcones CLF and DMF on Ehrlich Ascitic Tumor (TAE) cells of murinho mammary carcinoma, by MTT (3-(4,5-dimethylthiazol-2- yl)-2,5-diphenyltetrazolium bromide) colorimetric assay as described by Mosman (1983). **Methodology:** The compounds CLF and DMF were solubilized in dimethilsulfoxide 1%. TAE cells were colected from Murine peritoneal cavity, washed with PBS and maintained in 5% CO2 for 24h at 37°C in humidified atmosphere. After, RPMI-1640 medium was supplemented with 10% FBS, 1% penicillin/streptomycin and 0.3% amphotericin. The 1.0×105 TAE cells were plated in 96-well tissue culture plates and treated with different concentrations of CLF and DMF (0.2, 2.0, 20, 50, 100 and 200 μM) for 48 h. After treatment, 10 μL of MTT (5 mg.mL–1) was added to each well, and the plates were incubated at 37°C for 3 h. The purple formazan crystals were dissolved in 50 μL of SDS (dodecyl sulfate sodium), and the absorbance was determined at 545 nm. The cell viability was calculated: viability (%) =_ (absorbance of the treated wells)/(absorbance of the control wells) ×100. The tests were performed in triplicates and IC50 (concentration (μM) that results in a 50% reduction in cellular viability) was obtained from sigmoidal dose-response curves (nonlinear regression) using the software GraphPad Prism 5.0 for Windows. **Results:** The chalconas CLF and DMF presented a statistically significant cytotoxic effect inducing cell death in a dose dependent manner. The chalcones inhibit TAE cells viability with an estimated IC50 of 22.30±5.10 μM and 46.30±6.10 μM, respectively at 48 h of treatment, by nonlinear regression curve. **Conclusions:** The chalconas exhibits significant cytotoxicity in 48h against TAE cells. The CLF was more potent than DMF, but both results showed important dose-dependent biological property of chalconas. Therefore, future studies will be necessary to identify the molecular mechanisms where compound operates.