PHYTOCHEMICAL STUDY AND CYTOTOXICITY OF A CERRADO PLANT IN EHRLICH TUMOR

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Introduction: Ehrlich tumor (ET) is a murine mammary carcinoma that is used as experimental model in study for new treatments on cell proliferation in vitro and in vivo. The research for new compounds from plants with anti-tumor activity has increased in order to identify a molecule which can be used in chemotherapy treatments.

Objectives: To verify the presence of secondary compounds and cytotoxicity of the crude extract of the Annonaceae plant 3EI of ET in vitro and in vivo. Methodology: Phytochemical study was performed to detect the presence of secondary metabolites. A mouse with ascetic ET was used for removing of tumor cells for in vitro assays. Cells were subjected to treatment with the crude extract of 3EI diluted in DMEM in the following concentrations: 0.005mg/mL and 0.0003mg/mL. Cell viability was assessed in twenty-four hours by the method of exclusion of Trypan blue. To evaluate solid tumor growth 2.5x10^6 tumor cells were inoculated in paw of each animal. Treatments were made by gavage: one group was 0.0003mg/mL and another 0.005mg/mL, diluted in DMSO (4%) and water, the control group received the dilution solution. The paws were measured for 20 days, after this period it was collected for histological analysis (HE). The areas of necrosis and inflammatory infiltrate were quantified. Results: The phytochemical study showed flavonoids in greater intensity. Steroids, alkaloids and coumarins were in the same proportions. The concentration of 0.005mg/mL was cytotoxic with IC50 from the third hour (p <0.001). At in vivo assay, the concentration of 0.005mg/mL of 3EI extract caused decreased tumor growth, showed less necrosis and inflammatory infiltrate area. Conclusion: The crude extract of 3EI inhibits cell proliferation, and was cytotoxic in the concentration of 0.005mg/mL in vitro and in vivo.

Key Words: Ehrlich tumor, Cell culture, Plant extracts.
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