IN VITRO CYTOTOXICITY AGAINST DIFFERENT HUMAN CARCINOMA CELL LINES OF LATICIFERS PROTEINS OF *CALOTROPIS PROCERA*

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This work has evaluated the *in-vitro* anti-tumor activity of laticifers proteins (LP) from *C. procera*. The LP displayed anti-neoplasic activity with IC_{50} values ranging from 1.40 to 2.07 μg/mL to HL-60 and SF295 cell lines, respectively. In healthy peripheral blood mononuclear cells exposed to LP (10 μg/mL) for 72 h, no noticeable effects on viability or on cell morphology occurred. LP reduced cell viability but did not cause significant increase in the number of non-viable cells. LP was shown to cause inhibition of DNA synthesis compared to doxorubicin. Apparently, LP interferes in Topoisomerase I activity by acting upon DNA. HL-60 cells, treated with LP showed cells under apoptotic process with abundant vacuoles, chromatin condensation and fragmentation of the nuclei. The cytotoxic effects diminished when LP was treated with pronase suggesting the protein nature of active molecules. Passage of LP on an ion exchange chromatography gave rise to a fraction (PI) that retained all cytotoxicity. Treatment of PI with dithiothreitol reduced substantially the cytotoxicity. According to electrophoresis analysis a high molecular weight protein in PI is a suitable candidate to be involved in cytotoxicity. PI did not exhibit cysteine proteinase activity, an abundant proteolytic activity found in LP and thus it is unlikely to be involved in cytotoxicity.

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