

CYTOTOXIC EFFICACY OF CAMEROON MEDICINAL PLANT IN THE MANAGEMENT OF LEUKEMIA

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Abstract: The treatment of acute promyelocytic leukemia (APL) has been based on the administration of all-trans retinoic acid plus anthracycline chemotherapy, which is very effective as first line therapy; however 25 to 30% of patients will relapse with their disease becoming refractory to conventional therapy. Therefore, the aim of the present study was to investigate whether medicinal plant induced cell death is associated with necrosis. To achieve this goal, HL-60 cells were treated with different concentrations of medicinal plant for 24 h prior to cell viability using MTS, trypan blue, and propidium iodide assays respectively. The results obtained from the MTS, trypan blue, propidium iodine assay indicated that at very low concentration, medicinal plant has a stimulatory effect on the growth of HL-60 cells. A significant ($p < 0.05$) gradual decrease in live cells was observed when exposed to high level of medicinal plant. Data generated from the propidium iodide indicated that medicinal plant exposure significantly ($p < 0.05$) increased the proportion of fluorescence positive cells (necrotic death cells) compared to the control. This cytotoxicity was found to be associated with necrosis as revealed by a significant increase in dead cell concentration (Fluorescence) with increasing of medicinal plant doses. These results provide useful data on the anticancer activities of our medicinal plant in leukemia and demonstrated the novel possibilities of this medicinal plant in developing leukemia therapies.

Keywords: Medicinal plant, HL-60 cells, cytotoxicity, MTS assay, trypan blue, propidium iodine, cellometer vision

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