

Cytotoxic screening for three extracts of two plants using MTT assay and flow cytometric techniques

Aimun A. E. Ahmed^{1,2}

Abstract:

OBJECTIVES: This study was set out to screen the cytotoxic activity of three extracts of two plants against three cancer cell lines.

METHODS: Cytotoxic activity of three extracts of these two plants (*Haplophyllum tuberculatum* (H) and *Sonchus oleraceus* L.(S)) was tested against three cell lines: HeLa uterus (H2), A431 skin (A2), and MCF breast (M2) using the MTT assay and the flow cytometric technique *in vitro*.

RESULTS: The results revealed that similar yield percentages were obtained. Extract fractions from the first plant HF3 exerted high effects (>75%) on the three cell lines. The aqueous extract of HF3 exhibited significant ($P < 0.001$) cell growth inhibition activities estimated as (inhibitory concentration 50 in m/mL) of $(0.73 \pm 0.08, 0.7566 \pm 0.12, \text{ and } 0.65 \pm 0.04)$ on the HeLa, A431, and MCF7 cells, respectively, compared to standard doxorubicin.

CONCLUSIONS: The study concluded that similar yield percentages were obtained. Plant H exhibited higher activity, especially in its aqueous extract. Isolation, identification of the active (s) compounds, and determination of the mechanism of action were highly required.

Keywords:

Cell line, doxorubicin, HeLa Cells, humans, inhibitory concentration 50, tumor