

Potential anticancer effect of Phyla nodiflora extracts in breast cancer cell line, MCF7

Abstract

This study was to investigate the potential anticancer effect of Phyla nodiflora in MCF7 cells. The leaf and stem of this plant was extracted separately using methanol and ethyl acetate. The free radical scavenging activity of the plant extracts was determined using 2,2- diphenyl-1-picrylhydrazyl (DPPH) free radical scavenging assay, while the proliferation assay was performed using 3-(4,5- dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide (MTT) method. DNA fragmentation caused by apoptosis event was evaluated through DNA extraction. Compared to stem extracts (1.2134 mg/ml and 0.9877 mg/ml for ethyl acetate and methanol respectively), both leaf extracts exhibited lower EC50 values (0.4271 mg/ml and 0.6177 mg/ml for ethyl acetate and methanol respectively) which indicating higher antioxidant activity. Anti-proliferative results showed that MCF7 cells were inhibited by all the extracts with IC50 ranging from 90-120 µg/ml. DNA extracted from treated cells showed the formation of DNA laddering. The results suggested that Phyla nodiflora extracts might inhibit MCF7 breast cancer cell growth via apoptosis.