Cytotoxic Activity of Plants Extracts in MCF-7 and 3T3 Cells

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Breast cancer is one of the leading causes of women death. The objective of this work was to investigate the cytotoxic potential of plants extracts and its influence in expression level of PGs and MMPs on 3T3 and MCF-7 cells. Extracts were selected by antitumor activity according to the Brine Shrimp Test. Cytotoxicity assay was performed with 16 extracts in three different final concentrations (40, 60, 80 µg/mL). After 24 hours, cell viability was determined by optical density. Extracts showed distinct properties on MCF-7 and 3T3 cells, ranging from ability to stimulate both cell populations to growth as its reduction in a dose-dependent manner. Remarkably, some extracts had ability to reduce MCF-7 cells dramatically and stimulate growth of non-tumor cell line, showing a greater toxic capacity for tumoral lineage. Likewise, other extracts were more toxic to 3T3 than for MCF-7 cells as the concentration was increased. At low concentration, some extracts had the ability to stimulate growth of cell populations while at 80 µg/ml, growth was restrained and in some cases, extremely toxic to both populations. This effect appears reversed in other extracts, and at the concentration of 40 µg/mL was more toxic than higher concentration. Effects were observed on MMP activity when MCF-7 or 3T3 cells were incubated with extracts and analyzed by zymogram. We also observed a change in the incorporation of S35 by both cells strains when grown in the presence of extracts. These results lead us to search novel agents and therapeutic targets to cancer treatment.

Word Keys: Proteoglycans, Breast cancer, Extracellular matrix, Plant extracts.
Supported by: FAPEMIG