Cytotoxic Effect of Girard-T Reagent-based Schiff Bases and their
Dimethyltin (IV) Complexes on Human Colon Cancer Cells

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Abstract
Despite many efforts, no definitive treatment is yet knowing for cancer. Therefore, research on new compounds that have anti-cancer properties is especially important. The aim of this study is investigation the cytotoxic effect of Girard-T reagent-based Schiff bases and their complexes on HT29 cancer cells. HT29 cells was cultured in DMEM/F12 medium containing FBS 10% and antibiotics 1% then the effects of ligands and their complexes with the concentration of 0.1, 1 and 5 mg/ml were surveyed on these cells in 1, 2, and 3 days. Growth, proliferation and morphological changes were photographed using an inverted microscope. MTT assay and DAPI staining were used to quantify cell viability. With concentrations of 0.1, 1, and 5 mg/ml of [SnMe2(L2)] (the effective component) the survival were decreased to 34, 24 and 18% after 72h(P<0.05). Encountering cells with complex caused to induce apoptosis in relation with concentration so that, the cell viability of cells treated with concentrations of 5 mg/ml (the effective concentration) of \((H_2L)^1, (H_2L)^2,[SnMe_2(L)^1],[SnMe_2(L)^2]\) was 22, 18, 29, and 22 respectively after 72h and the highest apoptosis (82%) happened in 5mg/ml of SnMe2(L2). The synthetic components have a toxic and ant-proliferation effect on HT29 in relation with concentration.

Keywords: Anti-cancer, Apoptosis, Cell viability, Stem cells.