Induction of Apoptosis Evidenced by Caspase-3 in Lung Adenocarcinoma Cell (H1666 ATCC) through the Ethanol Extract of Alpinia purpurata Flower

Vega-Medina, Jenny

Lung adenocarcinoma accounts for 27% of cancer deaths. Research in ovarian cancer have evidenced the anticancer properties of ethanol extract of Alpinia purpurata. Protease caspase 3, produced by the cell evidences apoptosis. Is apoptosis of lung adenocarcinoma cells possible, as evidenced by the presence of caspasa 3, by applying the ethanol extract of Alpinia purpurata flower? The hypothesis is that applying flower extract of Alpinia purpurata to lung adenocarcinoma cells (H1666), apoptosis will be evidenced by the presence of caspase 3. An ethanol extract of Alpinia purpurata flower was prepared (57,000µg/mL concentration). Normal kidney cells (HEK 293) were put in 5 wells and lung adenocarcinoma in five other wells. All were cultured for 24 hours. Ethanol extract was applied to eight of the wells in amounts of 84, 42, 21 and 10.5µL. No extract was applied to two wells (the control). All were incubated for 48 hours. A cell count was performed. "Triplan blue" procedure was performed to discriminate between cell viability and non-viability. Cell viability identifies inhibition of cells. The greatest inhibiting extract of 21µL was identified with 16.7% viability, replication with 84µL presented 18.3% viability. Western blotting was evident production of caspase 3 in lung adenocarcinoma cells although the amount was not within the range established in the process of apoptosis. Cell count showed that the extract inhibited the H1666 cells, but didn’t affect HEK 293. Inhibition of lung adenocarcinoma cells was evidenced which can be a precursor of apoptosis. More research is necessary with other extract concentrations.

Awards Won: