ABSTRACT ID: 21
Oral

Anti-Cancer Activity Of *Luvunga Scandens* Extract Against Squamous Cell Carcinoma

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Introduction: Squamous cell carcinoma is reported as one of the most common types of cancer with increasing numbers of occurrence. *Luvunga scandens* is a plant possessing many bioactivities and general health effects, yet its anti-proliferative effect is under reported and need to be scientifically evaluated. **Materials and Methods:** MTT assay was used to assess the cytotoxicity of the plant against human squamous carcinoma cells in addition to the safety assessment for human dermal fibroblast cell line (HDF). The morphological changes of *L. scandens* treated squamous carcinoma cells has been confirmed by SEM, the apoptosis of the plant against squamous carcinoma cells has been tested using caspase 3/7 assay, followed by cell cycle analysis done using a flow-cytometer on squamous carcinoma cells treated with the IC50 dose of *L. scandens* plant. **Results:** The plant's extract possesses cytotoxic effect against squamous carcinoma cells with IC50 readings; (methanol= 37.5 mg/mL, dichloromethane= 38 mg/mL, hexane= 37.5 mg/mL), and safe on HDF cells. The SEM results demonstrate that *L. scandens* treated cells showed an overall change in the cell shape, alteration of surface morphology, absence of microvilli and appearance of blebs. Caspase 3/7 assay results show that *L. scandens* dichloromethane extract produces the highest level of apoptosis against squamous carcinoma cells. For cell cycle analysis, all the *L. scandens* treated squamous carcinoma cells show high readings in the sub-G1 phase. **Conclusion(s):** This in vitro study has proved that *L. scandens* plant exhibit anti-proliferative effects against Squamous carcinoma cells, hence, it can be considered as a new promising potential anti-cancer therapy.

KEYWORDS: MTT, SEM, HDF, *L. Scandens*