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Evaluation of cytotoxicity of *Moringa oleifera lam.* callus and leaf extracts on HeLa cells

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Background and Aims: There are considerable attempts worldwide on herbal and traditional compounds to validate their use as anti-cancer drugs. Plants from Moringaceae family including M. oleifera possess several activities such as antitumor effect on tumor cell lines. In this study we sought to determine if callus and leaf extracts of M. oleifera possess any cytotocicity.
Methods: Ethanol-water (70-30) extract of callus and leaf of M. oleifera were prepared by maceration method. The amount of phenolic compounds of the extracts was determined by Folin Ciocalteu method. The cytotoxicity of the extracts against Hela tumor cells was carried out using MTT assay. Briefly, cells were seeded in microplates and different concentrations of the extract were added. Cells were incubated for 72 h and their viability was evaluated by addition of tetrazolium salt solution. After 3 h medium was aspirated, dimethyl sulfoxide was added and absorbance was determined at 540 nm with an ELISA plate reader. cytotocicity was considered when more than 50% reduction on cell survival was observed.
Results: Callus and leaf extracts of M. oleifera significantly decreased the viability of Hela cells in a dose-dependent manner. However, leaf extract of M. oleifera were more potent than callus extract.
Conclusions: As the content of phenolic compounds of leaf extract was higher than that of callus extract, it can be concluded that phenolic compounds are involved in the cytotoxicity of M. oleifera.

Keywords: *Moringa oleifera*; Cytotoxicity; HeLa