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Investigation on Cytotoxicity of Divine Noni Juice (*Morinda citrifolia* L and *Garcinia cambogia* mix) Against Human Lung Adenocarcinoma cell

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Background: *Morinda citrifolia* (Noni) has been extensively used in folk medicine by Polynesians for over 2000 years. Noni has been reported to have broad therapeutic effects, including anticancer activity, in both clinical practice and laboratory animal models. Recently much attention has been devoted for searching potential safe herbal medicines from natural products for the treatment of cancer. The present work was carried out to study the cytotoxicity activity of Divine Noni Juice (DNJ), which contains *Morinda citrifolia* L (Noni) and *Garcinia cambogia* fruit mix, against human lung cancer cell lines.

Method: Cytotoxicity of Divine Noni Juice (DNJ) against human lung cancer cell lines performed by MTT assay method. This study was also aimed at apoptosis-inducing effects and inhibition of DNA synthesis in human lung cancer cell lines.

Results: DNJ with the concentrations of 40%, 20%, 10%, 7.5%, 5%, 2.5% and 0% were investigated for cytotoxicity studies including cellular toxicity, induction of cell apoptosis and inhibition of DNA synthesis. Concentration of 40 % showed cytotoxicity effect and also induces cell apoptosis in human lung adenocarcinoma cells (A549). The concentrations of 20 and 40 % DNJ exhibited inhibition of DNA synthesis in human lung adenocarcinoma cell.

Conclusion: Divine Noni Juice showed cytotoxicity against human lung adenocarcinoma cells (A549), also inducer of cell apoptosis and inhibition of DNA synthesis.

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Studies on Cytotoxicity of fruit extracts and isolated compound of *Morinda citrifolia* L. (Noni)

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Back ground: *Morinda citrifolia* (Noni) has been widely used for the treatment of variety of diseases in Ayurveda and folk medicine owing to nutritional and immune enhancing properties. Noni plant has been enriched with flavanoids, anthraquinone, steroids, glycosides and exhibited anti-cancer activity. The purpose of this study was to determine the Cytotoxicity effect of Noni fruit extracts and isolated compounds on HepG2 (Human Liver Cancer) cell.

Method: Dried Noni fruit powder was subjected to hot continue extraction in Soxhlet extractor with Acetone, Ethanol & Methanol for 72 hour separately. The Ethanol & Methanol extracts was subjected to Silica gel-column chromatography to afford purified compounds. Noni fruit extracts and isolated compounds were tested for Cytotoxicity effect against HepG2 (Human Liver Cancer) cell culture by MTT assay.

Results: Acetone (MCF-Ac), Ethanol (MCF-ET) & Methanol (MCF-Me) extract of Noni fruits showed Cytotoxicity against HepG2 cells with CTC50 (Cytotoxicity 50%) values of 90, 200 and 220 µg/ml & isolated compounds MCF ET C-1, MCF ME C-9 and MCF ME C-10 showed cytotoxicity at 156, 331 and 246 µg/ml, respectively. Acetone extract (MCF-Ac) and isolated compound (MCF ET C-1) showed significant Cytotoxicity against human cancer cells from liver origin. This in-vitro study has proved the selective cytotoxicity activity in *Morinda citrifolia* against liver cancer cells.