

Preliminary Phytopharmacological Evaluation of Methanol and Petroleum Ether Extracts of Selected Vegetables of Bangladesh

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Abstract : The present study was designed to investigate the antioxidant and cytotoxicity potential of methanol and pet ether extracts of the *Lagenaria siceraria* (LM, LP), *Cucumis sativus* (CSM, CSP), *Cucurbita maxima* (CMM, CMP) plants. For the phytochemical screening, crude extract was tested for the presence of different chemical groups. In *Lagenaria siceraria* the following groups were identified: alkaloids, steroids, glycosides and saponins for methanol extract and alkaloids, steroids, glycosides, tannins and saponins are for pet ether extract. Glycosides, steroids, alkaloids, saponins and tannins are present in the methanol extract of *Cucumis sativus*; the pet ether extract has the alkaloids, steroids and saponins. Glycosides, steroids, alkaloids, saponins and tannins are present in both the methanolic and pet ether extract of *Cucurbita maxima*. In vitro antioxidant activity of the extracts were performed using DPPH radical scavenging, nitric oxide (NO) scavenging, total antioxidant capacity, total phenol content, total flavonoid content, and Cupric Reducing Antioxidant Capacity assays. The most prominent antioxidant activity was observed with the CSM in the DPPH free radical scavenging test with an IC₅₀ value of 1667.23±11.00271 µg/ml as opposed to that of standard ascorbic acid (IC₅₀ value of 15.707± 1.181 µg/ml.) In total antioxidant capacity method, CMP showed the highest activity (427.81±11.4 mg ascorbic acid/g). The total phenolic and flavonoids content were determined by Folin-Ciocalteu Reagent and aluminium chloride colorimetric method, respectively. The highest total phenols and total flavonoids content were found in CMM and LP with the value of 79.06±16.06 mg gallic acid/g & 119.0±1.41 mg quercetin/g, respectively. In nitric oxide (NO) scavenging the most prominent antioxidant activity was observed in CMM with an IC₅₀ value of 8.119± 0.0036 µg/ml. The Cupric reducing capacity of the extracts was strong and dose dependent manner and CSM showed lowest reducing capacity. The cytotoxicity was determined by Brine shrimp lethality test and among these extracts most potent cytotoxicity was shown by CMM with LC₅₀ value 16.98 µg/ml. The obtained results indicate that the investigated plants could be potential sources of natural antioxidants and can be used for various types of diseases.

Keywords : antioxidant, cytotoxicity, methanol, petroleum ether

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