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A Study of Phenolic Contents and *in vitro* Antioxidant Activity of Different Solvent Leaf Extracts Obtained from Heen Kekiri/Len Kekiri (*Mukia maderaspatana* L.) Grown in Sri Lanka

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Background: Hyperphysiological burden of free radicals causes the imbalance between free radicals and antioxidants and results in the oxidation of biomolecules. Hence, there is a need to supply exogenous supply of antioxidants of natural origin, where synthetic antioxidant were reported to be carcinogenic.

Objectives: To perform qualitative analysis to test the phytochemicals present in different solvent extracts namely, 80% ethanol and water obtained from *Mukia maderaspatana* leaves. The quantitative tests were performed to determine the total phenolic content (TPC), total flavonoid content (TFC) and antioxidant activity of two solvent extracts obtained from plant *Mukia maderaspatana* leaves.

Methodology: The defatted crude extracts were prepared into 80% aqueous ethanol and water by steeping method and subjected to preliminary phytochemical screening tests. TPC and TFC were evaluated by using Folin-Ciocalteu assay and aluminium chloride colorimetric method respectively. The antioxidant activity was evaluated by using 2, 2-diphenyl-1-picrylhydrazyl (DPPH) assay.

Results: The leaf extracts of ethanolic and water obtained from *M. maderaspatana* revealed the presence of phenolic compounds, flavonoids, saponins, alkaloids and carbohydrates in both extracts. The TPC values for two extraction solvents were 455.608±64.743 mg GAE/100 g DW of leaves (for water extract) and 269.608±34.050 mg GAE/100 g DW of leaves (for 80% ethanol) respectively. The TFC of the solvent extracts tested were 445.663±101.215 (for water extract) and 100.516±745 mg CAE/100 g DW of the leaves (for 80% ethanol extract). Antioxidant capacity performed by DPPH assay for the different extraction solvents were 0.574±0.062 (for water extract) and 0.286±0.020 (for 80% ethanol extraction) mmol Trolox equivalents/100 g DW of the leaves.

Conclusions: Both extracts of *M. maderaspatana* leaves showed less antioxidant activity and need further investigation.

Keywords: *Antioxidants, Free radicals, Total Phenolic Content, Total Flavonoid Content, Mukia maderaspatana*