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Preliminary Study on Phytochemical and Proximate analysis of Leaves of *Plectranthus amboinicus* (Roxb.) of Sri Lankan Origin

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Abstract

There is an exceptional growth in the usage of herbal medicine in the management of a variety of diseases worldwide. However, plant materials used in herbal medicine are prone to adulteration, deterioration, and variation in composition, which may give rise to quality control issues in the final product. Therefore, evaluation of the quality of crude plant material prior to the development of commercially viable herbal medicines is of utmost importance to ensure the safety and efficacy of the final product. *Plectranthus amboinicus* (Family; Lamiaceae, Common name; Kapparawalliya), is a well-known medicinal plant used in the management of renal diseases in Sri Lankan traditional Ayurvedic medicine. The present study aimed to determine selected physical and chemical parameters of the leaves of *P. amboinicus*, using modern scientific techniques in order to ascertain the quality of the crude plant material prior to being incorporated in herbal products. The leaves of *P. amboinicus*, dried (40°C) up to a constant weight were subjected to determine selected physicochemical parameters, to identify phytochemicals and to develop Thin Layer Chromatography (TLC) profile. Preliminary phytochemical analysis was carried out for the aqueous extract using qualitative tests and TLC profile was developed for the dichloromethane extract using the solvent system; cyclohexane: dichloromethane: ethyl acetate: methanol in a ratio of 3:2:0.5:0.2. The results revealed that the leaves of *P. amboinicus* had 21.7±0.1% w/w total ash, 0.3±0.1% w/w acid insoluble ash and 7.4±0.1% w/w water soluble ash. The moisture content was 9.4±0.1% w/w. The results for cold water, cold ethanol, hot water, and hot ethanol soluble extractable matter were 5.3±0.1%, 0.7±0.1%, 8.0±0.4% and 1.2±0.0% w/w respectively. The preliminary phytochemical analysis revealed the presence of various phytoconstituents as alkaloids, steroid glycosides, flavonoids, saponins, tannins, phenolic compounds, and terpenoids. The dichloromethane leaf extract of *P. amboinicus* exhibited 11 prominent peaks at the R_f values of 0.04, 0.08, 0.19, 0.25, 0.39, 0.54, 0.60, 0.67, 0.79, 0.89 and 0.94 under UV 366 nm and after spraying vanillin-sulphuric acid. The results of the present study provide useful information on the characterization parameters of *P. amboinicus* of Sri Lankan origin. This would

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be beneficial as quality control parameters for differentiation of the plant from its adulterants and substitutes in the development of herbal products.

Key words: *Physicochemical parameters, Phytochemical analysis, Plectranthus amboinicus, Thin Layer Chromatography.*

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