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Phytochemical, Proximate and HPTLC Analysis of *Plectranthus zeylanicus* Benth (Iriweriya) Grown in Sri Lanka

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Background: *Plectranthus* species belonging to the family *Lamiaceae* are commonly used in traditional medicine preparations. *Plectranthus zeylanicus* belonging to this family is erroneously used in formulations due to the taxonomic ambiguity and morphological confusion with other *Plectranthus* species including *Plectranthus amboinicus*. Though they are morphologically similar, they have different therapeutic and pharmacological uses. Hence inappropriate use of them can lead to undesirable adverse effects.

Objectives: To determine phytochemical, proximate and High Performance Thin Layer Chromatographic (HPTLC) profiles for the preliminary identification of *P. zeylanicus* Benth (Iriweriya) which is commonly used to treat respiratory, gastrointestinal, dermatological and neurological disorders.

Methods: Mature whole aerial parts were obtained from western province, Sri Lanka, authenticated from National Herbarium, Peradeniya and oven dried. Extracts were obtained with methanol, acetone and distilled water as per WHO Guidelines. Preliminary phytochemical screening, proximate analysis and HPTLC were conducted to each extract.

Results: Phytochemical screening revealed that alkaloids, terpenoids, triterpenes and anthraquinones are present in all extracts while tannins, phenols, diterpenes and flavonoids are present only in methanol and aqueous extracts. Saponins and carbohydrates were available only in aqueous extract while proteins and glycosides were found only in acetone extract. Proximate analysis revealed that total ash, acid insoluble ash, water soluble ash, loss on drying, extractability in methanol, acetone and water were 16.12±0.91%, 0.64±0.02%, 7.19±1.27%, 17.09±0.14%, 16.82±0.23%, 5.13±0.13% and 60.27±1.72% w/w, respectively. Normal phase HPTLC fingerprint of methanol extract showed 11 peaks with methanol: distilled water: acetic acid (2:5:3) while acetone extract showed 10 peaks for distilled water: methanol: acetone (4:2:4). Reverse phase HPTLC fingerprint of aqueous extract showed 9 peaks with methanol: distilled water (7:3). Each was done in triplicate and results were expressed as mean ± standard deviation.

Conclusions: Therefore, the above parameters can be used as preliminary tools for identification and authentication of *P. zeylanicus* as raw materials in Ayurveda manufacturing.

Keywords: *High Performance Thin Layer Chromatography, Phytochemical screening, Plectranthus zeylanicus Benth, Proximate analysis*

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