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## **Phytochemical profile and *In vitro* sun protective activity of *Wrightia antidysenterica*, *Ipomoea pescaprae* and *Ipomoea aquatica* flower extracts**

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*W. antidysenterica*, *I. pescaprae*, and *I. aquatica* are known as important medicinal plants in Sri Lanka and are widely utilized in traditional medicine. Flowers are used in the preparation of medicines for the treatment of numerous diseases. Despite the fact that there is no adequate scientific literature available on these plants, this study was aimed at investigating the phytochemical profile, antioxidant properties, and sun protection Factor (SPF) of methanolic extracts of flowers. Phytochemical profiles were determined using the standard methods in the literature. Quantification of phytochemicals was done using gravimetric and spectrophotometric methods. The 2, 2-diphenyl-1-picrylhydrazyl (DPPH) and Ferric Reducing Antioxidant Power (FRAP) assays were performed to determine their antioxidant activities. Photoprotective activities were determined using a UV spectroscopic technique. Phytochemical screening showed the presence of alkaloids, flavonoids, tannins, phenols, diterpenes, terpenoids, and saponins as main classes, whereas quantification gave alkaloids, saponins, and tannin content ranged from 1.09-2.16%, 6.18-10.82 (w/w%), and 59.52-84.55 mg TAE/g, respectively. The total phenolic content (85.3-144.75 mg GAE/g), total flavonoid content (101.9-219.87 mg QE/g), FRAP value (475.2-675 mol Fe<sup>2+</sup>/g), and DPPH scavenging capacity (158.0-326.25 g/mL) were all present in significant amounts in the extracts. *I. aquatica* and *I. pescaprae* showed the highest SPF (23.4±0.012), while *W. antidysenterica* showed SPF 20.29±0.016 at 1 mgmL<sup>-1</sup>. The reference agent (OLIO-SUN ERA) also had higher SPF (23.03±0.028). Thus, *W. antidysenterica*, *I. pescaprae*, and *I. aquatica* flower extracts have adequate antioxidant and photoprotective activities. Therefore, it is concluded that flower extracts can be considered to develop photoprotective formulations in different combinations and proportions.

**Keywords:** Sun protection factor (SPF), Mansur equation, Sun Screen, Methanol, *I. aquatica*, DPPH scavenging capacity

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