

Quantitative Analysis of Bioactive Compounds and Antioxidant Activities of *Heliotropium Indicum* Trunk

Abstract

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Introduction: *Heliotropium indicum* (*H.indicum*) belongs to the Boraginaceae family, which is widely used for ethnobotanical applications as a medicinal plant in Cambodia. *H.indicum* trunk contains significant bioactive compounds with strong antioxidant activities and it is valued for its potential to treat various such as analgesic, antiseptic, anti-inflammatory. The study aims to quantify the bioactive compounds of *H. indicum* trunk such as total phenolic content (TPC), total flavonoid content (TFC) and antioxidant activities of *H.indicum* extraction.

Methods: The dried trunk 20 mg was transferred to 1% hydrochloric acid to 99% methanol, and it was then ultrasonicated at 30°C for 30 mins. The extract was filtered and evaporated to obtain the crude extract (CE). The TPC was determined using Folin-Ciocalteu method, and TFC was determined using the aluminum chloride (AlCl₃) colorimetric method, and Ferric Reducing Antioxidant Power assay (FRAP). CE at concentrations of 50–1000 µg/ml was assessed for antioxidant activity using ABTS (2,2'-azino-bis(3-ethylbenzothiazoline-6-sulfonic acid)) radicals.

Results: The results showed that the methanolic crude extract has TPC 0.67 ± 0.08 mg gallic acid equivalent/g of CE, TFC was 2.83 ± 0.17 mg quercetin equivalent/g of CE and antioxidant activities by FRAP showed 1.66 ± 1.51 mmole FeSO₄/g of CE, ABTS radical scavenging activity showed the highest concentration at 1000 µg/ml had $79.41 \pm 2.74\%$.

Conclusion: *H. indicum* trunk have confirmed the presence of notable amounts of bioactive compounds and its significant antioxidant activities to support further exploration of pharmacological effects and as a promising candidate for development into modern formulation of herbal medicines, supplement or functional food ingredients with antioxidant properties.

Ethics statement: The research was conducted plant material in the laboratory and did not include human or animals subject with following the biosafety guideline.

Conflicts of interest: The authors have no conflict of interest.

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