

Soxhlet extraction of phenolic compounds from *Vernonia cinerea* leaves and its antioxidant activity

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ABSTRACT

Recently, discovering natural antioxidants have gained more interest due to the fact that most infectious ailment, namely cardiovascular disorder, diabetes and cancer are associated with free radical cells. Thus, the extraction of phenolic compounds from *Vernonia cinerea* leaves through Soxhlet extraction method was studied. The effects of extraction time (1–4 h), feed-to-solvent (1:10–1:25 g/mL) and ethanol concentration (20–80% v/v) on the yield of extract, total phenolic content (TPC) and total flavonoid content (TFC) were examined. Moreover, the phenolic compounds and functional groups in the extract at maximum conditions were identified using Liquid Chromatography-Mass Spectrometry Quadrupole Time of Flight (LC-Q-TOF-MS) and Fourier Transform Infrared Spectrometry (FTIR), respectively. The antioxidant activity of the extract was as well investigated. The experimental results showed that the highest yield of extract ($10.01 \pm 0.85\%$ w/w), TPC (53.96 ± 1.45 mg GAE/g d.w.) and TFC (30.09 ± 0.44 mg QE/g d.w.) were achieved using extraction time of 2 h, feed-to-solvent of 1:20 g/mL and ethanol concentration of 60% v/v. However, the extract reflected good antioxidant activity.

KEYWORDS: *Vernonia cinerea*; Soxhlet extraction; Total phenolic content; Total flavonoid content; Antioxidant