The Total Phenolic Content, Total Flavonoid Content and Antioxidant Properties of E.tirucalli L. Extract Partitioned using Different Solvents

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Abstract

E.tirucalli L. is a succulent plant native to Africa renowned for its medicinal properties and antioxidant activity. This study aimed to evaluate the total phenolic and flavonoid content as well as the antioxidant activity of E.tirucalli L. extracts obtained using different solvents. Aqueous ethanol, hexane, and dichloromethane were used for extraction through Soxhlet extraction and partitioning. The total phenolic content was highest in the aqueous ethanol extract (2.501 mg GAE/g), followed by hexane (0.110 mg GAE/g) and dichloromethane (0.050 mg GAE/g) extracts. Similarly, the total flavonoid content was highest in the aqueous ethanol extract (1.307 mg QE/g), followed by hexane (0.164 mg QE/g) and dichloromethane (0.061 mg QE/g) extracts. The DPPH assay demonstrated that the aqueous ethanol extract exhibited the highest radical scavenging activity (RSA) with an IC_{50} value of 36.89 ± 0.05 µg/mL, followed by dichloromethane (50.94 ± 0.39 µg/mL) and hexane (62.42 ± 1.34 µg/mL) extracts. These findings indicate that aqueous ethanol is an effective solvent for extracting phenolic and flavonoid compounds with potent antioxidant activity from E.tirucalli L. extracts.

Author keywords

DPPH; E.tirucalli L; total flavonoid content; total phenolic content

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