Quantification of Polyphenols Content and Antioxidant Activity of Euphorbia tirucalli L. Extracted using Maceration and Soxhlet Method

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Abstract

Euphorbia tirucalli L. (E. tirucalli) has gained attention for these past few years in terms of its phytochemical studies due to the antioxidant attribution of polyphenols source as its bioactive compounds in extracts. In order to extract important plant compounds, conventional extraction methods such as maceration and Soxhlet are still widely incorporated for plant extraction techniques due to their convenient application in laboratory settings. This study focused on the two conventional techniques; maceration and Soxhlet on polyphenols extraction of E. tirucalli using

various extraction solvents. In order to provide insight into its potential for polyphenols extraction, yield percentage (%) and phytochemical tests such as Total Phenolic Content (TPC), Total Flavonoid Content (TFC), and antioxidant activity (%) were assessed. In terms of yield percentage, Soxhlet methanolic extract was found to be the best. The findings also suggest that both maceration and Soxhlet techniques are effective in extracting a significant amount of phenolics and flavonoid content in which highest value recorded were 17.26 ± 0.23 mgGAE/100g and 50.08 ± 1.13 mgQE/100g for maceration while 16.17 ± 0.21 mgGAE/100g and 43.02 ± 0.01 mgQE/100g for Soxhlet. Maceration with methanol solvent appears to be more effective for TPC and TFC while Soxhlet acetonic extract is chosen as the best for antioxidant activity with 75 .79 ± 0.04 % of radical scavenging activity in E. tirucalli extract. Thus, this study indicates the noteworthy potential of both maceration and Soxhlet techniques for polyphenols extraction.

Author keywords

antioxidant activity; Euphorbia tirucalli L; maceration; polyphenols; Soxhlet; total flavonoid content; total phenolic content

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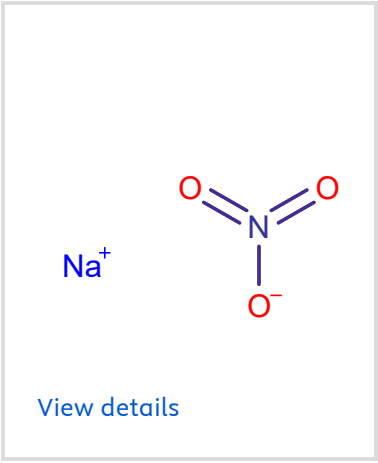

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