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PHYTOCHEMICAL AND ANTIOXIDANT ASSESSMENTS OF THREE FRACTIONS FROM METHANOL EXTRACT OF SPATHODEA CAMPANULATA BEAUV. LEAVES

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Aims: To screen hexane, ethyl acetate and methanol fractions of the methanol extract of *Spathodea campanulata* leaves for secondary metabolites, to isolate and to characterize constituents of the ethyl acetate fraction using GC-MS and IR and to determine the antioxidant activities of the three fractions.

Methodology: Methanol extract of *Spathodea campanulata* leaves was obtained by cold extraction, and partitioned into hexane, ethyl acetate and methanol fractions. Phytochemical screenings of the fractions were carried out using standard procedures to identify the class of constituents present in each of them. Ethyl acetate fraction was subjected to column chromatographic separations by gradient elution, and isolates were TMS (trimethylsilyl) derivatized and characterized by GC-MS (gas chromatography-mass spectrometry). Antioxidant content was also evaluated on the three fractions using 2,2-diphenyl-picrylhydrazyl (DPPH) free radical scavenging method. Percentage of inhibition and IC₅₀ values were obtained for each fraction.

Results: Phytochemical screenings revealed presence of alkaloids, tannins, saponin, resins, phenol, cardiac glycosides,

steroids, flavonoids, anthraquinones and terpenoids in the three fractions in varying concentrations. Alkaloids, resins, phenol and cardiac glycosides were found to be intense in the three fractions while phlobatannins was found to be absent in all the three fractions. Three compounds isolated from the ethyl acetate fraction were characterized based on MS and IR spectral interpretations as palmitic acid, ethylamine and caffeic acid. Percentage of inhibition of the three fractions indicates that they have substantial antioxidant activity with the standards at high concentration of 250 to 1000 µg/mL. The hexane fraction has the highest antioxidant activity with an IC₅₀ of 178.46 µg/mL when compared to other fractions.

Conclusion: This paper reports phytochemical constituents and high antioxidant activity (at concentrations of 250 µg/ mL and above) of the African tulip tree (*Spathodea campanulata*) when compared to the standards. This has not been earlier reported in literature, our results support its wide ethno-medicinal applications.

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