Hytochemical Investigation and Free Radical Scavenging Activities of Essential Oil, Methanol Extract and Methanol Fractions of Nephrolepis Biserrata

ABSTRACT

Objective: In the current study, the essential oil, methanol extract and methanol fractions (n-hexane, chloroform, ethyl acetate and n-butanol) of Nephrolepis biserrataL. were evaluated. Methods: Preliminary phytochemical screening was done. The antioxidative effect was determined using 2,2diphenyl-1-picrylhydrazyl (DPPH) radical scavenging activity. Total phenol and flavonoid contents were calculated using Folin-Ciocalteau and aluminium chloride reagents. The phytochemical analysis of the essential oil, methanol extract and methanol fractions were performed by gas chromatography - mass spectrometry (GCMS). Results: The preliminary screening confirmed the presence of active chemical constituents such as anthraquinones, alkaloids, tannins, steroids, phytosterol, saponin, triterpinoids and flavonoids. Our results also indicated that essential oil, methanol extract and methanol fractions are rich in phenolic and flavonoid contents. The GCMS analysis of our samples showed the presence of various biological important compounds. The dominant compounds are benzeneacetaldehyde, alpha.-cubebene, butyrolactone, phenol, benzyl alcohol, phenol, 2-methoxy-, 4h-pyran-4-one, 2,3-dihydro-3,5-di hydroxy-6-methyl, 2h-pyran-2-one, 4,6-dimethyl-, catechol, benzofuran, 2,3-dihydro-, phenol, 2,4-bis(1,1-dimethylethyl), hexadecanoic acid, methyl ester, n-hexadecanoic acid, 9,12-octadecadienoic acid, methyl ester, phytol, gamolenic acid and octadecanoic acid.Conclusion: Our results demonstrate that the essential oil, methanol extract and methanol fractions of the N. biserrate represent a good source of potential bioactive compounds that could be used in pharmaceutical industry.