

Phytochemical screening and antioxidant activity assessment of the leaf stem and root of (*Labisia paucifolia*)

ABSTRACT

Researches have focused on medicinal plants in order to extract natural and low cost antioxidants that can help to protect the human body against oxidative stress and replace the synthetic additives that might be carcinogenic. In the present study, the crude extracts of leaves, stems and roots of *Labisia paucifolia* were investigated for their phytochemical constituents and antioxidant activities. The chemical compositions of bioactive compounds were determined using HPLC and GC-MS and the antioxidant activities measured by DPPH and FRAP methods. The results indicated that leaves methanolic extract had highest total phenolic and flavonoid contents with respective values of 2.51 mg gallic acid equivalent g DW-1 and 1.29 mg rutin equivalent g DW-1, compared to roots and stems. Meanwhile, the HPLC analysis showed the presence of gallic acid and kaempferol as the major phenolic and flavonoid compounds in all parts of *L. paucifolia*. Other metabolites were detected by GC-MS screening including 9,12,15-Octadecatrienoic acid, methyl ester (22.72%), 4H-Pyran-4-One,2,3-dihydro-35-dihydroxy-6-methyl (7.93%) and acetic acid (9.02%) as the main compounds in the leaf, stem and root extracts of *L. paucifolia*. The extracts possess antioxidant activity because the free radical scavenging and ferric reducing power activities were higher in leaf extract at a concentration of 500 g mL⁻¹ with values of 53% and 51%, respectively, as compared to the stem and root, but the activities were around 32-53% lower than those of antioxidant standards such as BHT and α -tocopherol. The present result revealed that *L. paucifolia* extracts contain variable patterns of flavonoids, phenolics and various bioactive volatile compounds and it could be applied as a natural antioxidant source for industrial purposes.

Keyword: Antioxidant activities; GC-MS screening; HPLC analysis; *Labisia paucifolia*; Phytochemicals constituents