

Free Raducal Scavenging Activity of Fractionated Extract and Structural Elucidation of Isolated Compounds from Hydrocotyl Bonariensis Comm. Ex Lam Leaves

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Abstract : Hydrocotyl bonariensis is a plant which anticataractogenic potentials have been reported. In the present study an attempt was made to evaluate the in vitro antioxidant activity of the fractionates of the leaves extract and also characterize some of its chemical constituents. DPPH, H₂O₂, OH and NO free radical scavenging, metal chelating and reducing power activity was used to evaluate the antioxidant activity of the crude extract fractionates. Fresh leaves of Hydrocotyl bonariensis leaves were extracted in 70% methanol. The extract was partitioned with different solvent system of increasing polarity (n-hexane, chloroform, ethyl acetate methanol and water). Compounds were isolated from the aqueous fractionate using accelerated gradient chromatography, vacuum liquid chromatography, preparative TLC and conventional column chromatography. The presence of the chemical groups was established with HPLC and Fourier Transform Infra Red. The structures of isolated compounds were elucidated by spectroscopic study and chemical shifts. Data from the study indicates that all the fractionates contain compounds with free radical scavenging activity. This activity was more pronounced in the aqueous fractionate (DPPH IC₅₀, 0.025 ± 0.011 mg/ml, metal chelating capacity 27.5%, OH- scavenging IC₅₀, 0.846 ± 0.037 mg/ml, H₂O₂ scavenging IC₅₀ 0.521 ± 0.015 mg/ml, reducing power IC₅₀ 0.248 ± 0.025 mg/ml and NO scavenging IC₅₀ 0.537 ± 0.038 mg/ml). Two compounds were isolated and when compared with data from the literature; the structures were suggestive of polyphenolic flavonoid, quercetin and 3-O-β-D-glucopyranosyl-sitosterol. The result indicates that H. bonariensis leaves contain bioactive compounds with antioxidant activity.

Keywords : antioxidant, cataract, free radical, flavonoids, hydrocotyl bonariensis

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