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The in vitro evaluation of antioxidant properties of two flavonoids compounds isolated from medicinal plant

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Abstract

Purpose: The aim of this study is to evaluate the antioxidant activities of two compounds, isolated from *Varthemia iphionoids* (Asteraceae family) methanol extract.

Methods: The plant material (19 kg) was extracted with ethanol at room temperature (7 days). The ethanol extract obtained was evaporated under vacuum and the resulting crude residue (1 kg) was dissolved in the presence of 10% aqueous methanol and delipidated with hexane. The aqueous methanol extract was evaporated to give a gummy residue (660 g). By column chromatography (silica gel, 400 mesh) and TLC followed by identification by NMR. Two flavonoids compounds were obtained.

Results : The antioxidant activities of tow identified flavonoids: kumatakillin (1) and Penduletin (2) were determined. The results indicated that the compounds showed a potent scavenging activity with DPPH radical and H₂O₂ in which was comparable to quercetin as standard, and had the ability to prevent the oxidation of β-carotene. In anti-hemolytic assay, the two compounds gave a TH₅₀ higher than standard and the best result was shown with (2) (TH₅₀ = 60.14 ± 0.72). Moreover, the evaluation of anticoagulant and thrombolytic potential showed that, the compounds had significantly prolonged the clotting time and exhibited an important thrombolytic activity compared to the control (***) p < 0.001).

Conclusion: These results are promising for further studies of the biological and pathological effects of these natural products.

Key Words: *Varthemia iphionoids*, Flavonoids, Free Radicals, Antioxidant

