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A phytochemical and Biological Study of Viscum schemperi Engl. Growing in Saudi Arabia

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Abstract : Phytochemical study of the methanolic extract of the air dried powdered of the parts of Viscum schemperi Engl. (Family: Viscaceae) using different chromatographic techniques led to the isolation of five compounds: -amyrenone (1), betulinic acid (2), (3β)-olean-12-ene-3,23-diol (3), -oleanolic acid (4), and α-oleanolic acid (5). Their structures were established based on physical, chemical, and spectral data. Anti-inflammatory and anti-apoptotic activities of oleanolic acid in a mouse model of acute hepatorenal damage were assessed. This study showed the efficacy of oleanolic acid to counteract thioacetamide-induced hepatic and kidney injury in mice through the reduction of hepatocyte oxidative damage, suppression of inflammation, and apoptosis. More importantly, oleanolic acid suppressed thioacetamide-induced hepatic and kidney injury by inhibiting NF-κB/TNF-α-mediated inflammation/apoptosis and enhancing SIRT1/Nrf2/Heme-oxygenase signalling pathway. These promising pharmacological activities suggest the potential use of oleanolic acid against hepatorenal damage.

Keywords : oleanolic acid, viscum schimperi, thioacetamide, SIRT1/Nrf2/NF-κB, hepatorenal damage
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