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Bioassay-directed isolation of two novel antimicrobial coumarin and flavanone from *Acanthus montanus*

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Abstract. This work is geared towards extraction, isolation and characterization of phytocompounds from the ethyl acetate extract of *Acanthus montanus* root. The ethyl acetate extract was obtained through sequential maceration using a nonpolar solvent first before introducing ethyl acetate. The extract was subjected to vacuum liquid chromatography (VLC) for fractionation and phytocompounds were purified through column chromatography. Characterization was done employing infrared spectroscopy (IR) and nuclear magnetic spectroscopy (NMR). The phytocompounds were isolated and characterized as 6,7-dihydroxy-4-methoxycoumarin and 2′-acetoxy-4′,5-dihydroxy-6′-methoxy-3-(2″-hydroxy-6″-oxanyl)-8-(2‴-hydroxy-4‴-oxanyl)flavanone named Acanthusin G with percentage yield of 0.7% and 1.16% respectively. 6,7-dihydroxy-4-methoxycoumarin and Acanthusin G indicated good antimicrobial activities at 200 µg/ml with zone of inhibition range of 18 - 36 mm against fifteen pathogens using agar well diffusion method.

***Keywords*:** *Acanthus montanus*; vacuum liquid chromatography; coumarin; flavanone; oxanol; Acanthusin G; pathogens.

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