Characterization of Triterpenoids Antimicrobial Potential in Ethyl Acetate Extracts from Aerial Parts of Deinbollia Pinnata

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Abstract : Triterpenoids are a diverse class of secondary metabolites with potential antimicrobial properties. In this study, the crude extracts from ethyl acetate was obtained with ultrasonic extraction method. Using a combined chromatographic separation method to isolate squalene (1) stigmasterol (2), stigmasta-5,22-diene-3-ol acetate (3), γ -sitosterol (4), lupeol (5), taraxasterol (6), and betulinic acid (7) from ethyl acetate extracts. Ethyl acetate crude extracts and isolated compounds were both screened for antimicrobial activity and minimum inhibitory concentration (MIC). For ethyl acetate crude extracts with concentrations of (1.5, 0.75, 0.35, & 0.168 mg/mL) indicated marginal antibacterial activity with a range of 17, 20 and 14 mm zone of inhibition for Staphylococcus aureus, Escherichia coli and Candida albicans and lower minimum inhibitory concentrations ranges from 18.75 µg/ml to 150 µg/mL. Butulinic acid showed the highest activity against E. coli and C. albicans at 15 mm and 15 mm followed by Lupeol against S. aureus, E. coli and C. albicans at 13, 12, 12 mm. Moreso, no antimicrobial activity for both S. aureus and C. albicans with squalene except for E. coli which showed activity at 11 mm with 300 µg/mL (MIC). Thus, abundant triterpenoids in Deinbollia pinnata will be another centered area for antimicrobial drug discovery.

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Keywords : triterpenoid, antimicrobial potentials, deinbollia pinnata, aerial parts

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