Antimicrobial Activity and Bioactive Constituents of Alectra sessilifora (Vahl) Kuntze Methol Extract

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ABSTRACT

Alectra sessiliflora (Vahl) Kuntze (Scrophulariaceae) is traditionally used in western Kenya in the management of microbial infections. The water, chloroform and methanol extracts of A. Sessiliflora whole plant exhibited antimicrobial activity against a range of bacteria (Staphylococcus aureus, Pseudomonas aeruginosa, Escherichia coli, Shigella dysenteriae and Bacillus pumillus) and fungi (Candida albicans, Aspergillus niger and Cryptococcus neoformans). The methanol extract exhibited the highest activity with minimum inhibitory concentration (MIC) of 3.13-6.25 and 3.13-12.5 mg/ml for bacteria and fungi, respectively. Chromatographic fractionation of the methanol extract through non-polar D101 macroporous resin beads yielded three bioactive compounds: two phenolic compounds, p-coumaric acid and 3,4-dihydroxybenzoic acid, and a flavonoid, luteolin. The exhibited appreciable activities against tested bacteria and fungi with MIC values ranging from 0.13 to 0.25 and 0.13 to 0.50 mg/ml, respectively. These constituents might be responsible either individually or collectively for the traditional use of the plant to manage bacterial and fungal ailments. The in vitro antimicrobial activity and isolation of bioactive compounds from this plant are being reported for the first time.