

Comparison of *In vitro* antibacterial activity of *Plectranthus hadiensis*, *Cyperus rotundus* and *Desmodium triflorum* extracts against *Enterococcus faecalis*

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Enterococcus faecalis is an opportunistic pathogen in gastroenteric tract, causes a significant number of antibiotic-resistant infections. This study was conducted to explore the antibacterial activity of *Plectranthus hadiensis*, *Cyperus rotundus* and *Desmodium triflorum* plant extracts against *E. faecalis*. Crude extracts were obtained through maceration with Hexane, Dichloromethane (DCM), Ethyl acetate, Acetone, and Methanol solvents. Crude extract 1mg was dissolved in 1mL of solvent which use for the extraction previously. Antimicrobial activity was investigated by disk-diffusion method. Chloramphenicol disc as the positive control and solvent soaked disc as the negative control were used. Minimum inhibitory concentrations (MIC) in two-fold dilution of DCM plant extracts from 4 mg/mL to 0.125 mg/mL were determined by microbroth-dilution method. Chloramphenicol as the positive control and Muller Highton Broth + DCM as the negative control were used. Breakpoints were confirmed by culturing a loopful from the well on Muller Highton Agar plates as a purity check. DCM extracts of *P. hadiensis*, showed remarkable *in vitro* antibacterial activity by suppressing *E. faecalis* with the highest mean Zone of inhibition (ZOI) (16.67 ± 0.57 mm). *P. hadiensis*, *C. rotundus* and *D. triflorum* DCM extract showed MIC of 0.25-0.125 mg/mL, 1-0.5 mg/mL and 2-1 mg/mL respectively. According to the results of the present study, DCM is the most effective solvent for solubilizing antimicrobial compounds and *P. hadiensis* is the plant containing most effective active compounds which can be potential sources for the synthesis of novel drugs to suppress *E. faecalis*.

Keywords: Antimicrobial activity, Antibiotic-resistant, DCM extract, *Enterococcus faecalis*, MIC

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