

In vitro antimicrobial activity of *Cynodon dactylon* (L.) pers. (bermudas) against selected pathogens

Abstract

Cynodon dactylon (L.) Pers. is a type of perennial grass that possesses great medicinal values. In this study, the antimicrobial activity of the plant crude extract from seven different solvents (acetone, chloroform, diethyl ether, ethanol, ethyl acetate, methanol, and n-pentane) was investigated against some pathogens (*Bacillus cereus*, *Bacillus subtilis*, *Escherichia coli*, *Klebsiella* spp, *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Streptococcus pyogenes*, and *Streptococcus pneumonia*) using disc diffusion method and thin-layer chromatographic (TLC) bioassay for plant-SPE extracts against *Aspergillus niger*. Crude extraction showed that ethanolic extraction produced highest yield (7.065 %) followed by methanolic (5.420 %) and chloroform (3.550 %) extraction. The lowest yield was obtained from n-pentane extraction (0.500 %). The antimicrobial study revealed broad spectrum of antimicrobial activity from ethanol (7.0–10.0 ± 0.0–1.0 mm) and ethyl acetate (7.0–12.0 ± 0.0–1.0 mm) extracts against all of the bacterial pathogens. Both methanol and acetone extracts showed activity to *B. cereus* (8.0 ± 0.0 mm) and *B. subtilis* (7.0 ± 0.0 mm), while chloroform extract showed activity to *B. subtilis* (7.0 ± 0.0 mm) and *S. pyogenes* (8.3 ± 0.6 mm), respectively. Diethyl ether extraction showed activity only to *S. pyogenes* (7.3 ± 0.6 mm), while no activity was observed from n-pentane extraction. Great antimicrobial activity were observed for both ethyl acetate and ethanol SPE-based extracts (SBE) with size of inhibition ranging from 8.0 ± 0.0 mm to 15.7 ± 0.6 mm for ethyl acetate SBE and 8.0 ± 0.0 mm to 13.0 ± 0.0 mm for ethanol SBE. No significant antimicrobial activity was observed from thin-layer chromatographic bioassay against *A. niger*.