ANTI-BACTERIAL ACTIVITY OF AQUEOUS AND METHANALIC ROOT EXTRACTS OF MEDICINAL PLANT HETEROPOGON CONTORTUS

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Synthetic drugs available for the treatment of chronic and infectious diseases are very expensive and some of them have become less effective due to the emergence of antibiotic resistance. As such, research is now focused on natural sources, including plants and plant parts for the development of novel therapeutic agents. This study evaluated the *in vitro* anti-bacterial activity of aqueous and methanolic root extracts of Sri Lankan medicinal plant *Heteropogon contortus* against two clinically significant pathogenic strains, *Escherichia coli* (ATCC 25922) and *Staphylococcus aureus* (ATCC 25923). Agar well diffusion method was performed separately in triplicates (N=3) for both microbial suspensions to evaluate the anti-bacterial effect. Additionally, phytochemical compositions of aqueous and methanolic root extracts were also examined by performing standard chemical tests. Results revealed that each crude root extract exhibited anti-bacterial activity against both *E. coli* and *S. aureus.* The largest zones of inhibition against both *E. coli* and *S. aureus* were detected from the methanolic root extract at a concentration of 200 mg/ml and this is a novel finding. Phytochemical analysis of roots revealed the presence of bioactive constituents such as alkaloids, phenols and flavonoids that account for the anti-bacterial potential. Therefore, root of *H. contortus* is a reliable source to develop potent, cheap and natural anti-bacterial agents. Future research focusing on high concentrations of different root extracts is recommended to further understand the anti-bacterial capability of *H. contortus.*

Keywords: *Heteropogon Contortus,* Medicinal Plant, Root, Anti-Bacterial Activity