

In Vitro Antimicrobial Activity of Crude Leaf Extracts from *Aloe secundiflora*, *Bulbine frutescens*, *Vernonia lasioporus* and *Tagetes minuta* against *Salmonella typhi*

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Abstract

Four medicinal plants leaves were investigated to evaluate their antibacterial potential of the methanol extracts against *Salmonella typhi* by disc diffusion method. The methanol extract from *Aloe secundiflora* showed strong antibacterial activity against a clinical isolate of *Salmonella typhi* at low concentrations (5.5 mg/ml) as compared to *Bulbine frutescens* extract (8.8 mg/ml). The minimum inhibitory concentration ranged from 5 mg/ml - 9 mg/ml whereas the maximum bactericidal concentration range from 7 mg/ml - 11 mg/ml. The standard antibiotic used was ciprofloxacin (15 µg/ml) was used as a positive control while dimethyl sulphoxide and distilled water were used as the negative control. The extracts were preliminary screened for the presence of secondary metabolites to determine the presence of favonoids, alkaloids, tannins and saponins. The results supported the use of the medicinal plants in the treatment of infections caused by *Salmonella typhi*.

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whatman filter paper no. 1. The filtrate was poured into a round bottom flask and concentrated using a vacuum evaporator and stored in a labelled amber glass bottle at room temperature away from light and heat before being used for antibacterial efficacy test.

Antimicrobial susceptibility testing

The microorganism used was clinical isolate of *Staphylococcus aureus* obtained from Kenyatta University Health Centre Laboratory, Nairobi.

Conclusion

In conclusion, the present study will help us to use these medicinal plants as a source of herbal medicine to treat different infectious diseases caused by *Staphylococcus aureus* and other gram negative bacterial pathogens. The extracts can also be used as raw material in the manufacturing of conventionally used drugs against pathogenic bacteria that have developed resistance against standard antibiotics. Further isolation of the specific bioactive compounds responsible for the antimicrobial activity will give us other natural resources that can be used in treating bacterial infections.

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