

## Antibacterial and antifungal activities of 10 Kenyan *Plectranthus* species in the Coleus clade

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### ABSTRACT

Background Information: *Plectranthus* L'Hér. is an economically important genus with horticultural, medicinal and food uses. Most *Plectranthus* species are used in traditional medicine and have attracted the interest of researchers who have studied them in attempt to explore the bioactivities of their phytoconstituents. Materials and Methods:

The current study investigated the antimicrobial activities of 10 Kenyan *Plectranthus* species through disc diffusion and broth dilution method.

**Results:** Results indicated that, dichloromethane/methanol (1:1) total leaf extracts from *Plectranthus barbatus* displayed the highest antimicrobial activity compared to the other nine *Plectranthus* species with minimum inhibitory concentration (MIC) values of 25, 40, 100, 50, and 100 mg/ml against methicillin resistant *Staphylococcus aureus* (MRSA), *Bacillus cereus*, *Escherichia coli*, *Candida albicans*, and *Aspergillus niger*, respectively. At a concentration of 200 mg/ml, the antibacterial activity of total leaf extracts of *P. barbatus* (MIC value = 25 mg/ml) and *Plectranthus lanuginosus* (MIC value = 40 mg/ml) against MRSA was not significantly different from positive control drug; amoxicillin. Similarity, at a concentration of 200 mg/ml, total leaf extracts from *Plectranthus ornatus* (MIC value= 50 mg/ml) and *P. barbatus* (MIC value = 50 mg/ml) exhibited antifungal activity against *C. albicans* which was not significantly different from that of the positive control; ketoconazole.

### Conclusion:

The study reports for the first time, the antimicrobial activity of *Plectranthus pseudomarrubioides*, *Plectranthus edulis*, *Plectranthus aegyptiacus*, *Plectranthus Otostegioides*, and *Plectranthus lanuginosus*.

The study has demonstrated broad bacteriostatic activity of *P. barbatus* and thus recommends further studies on this plant aimed at discovery of novel antimicrobial agents.

### KEY WORDS:

Antimicrobial activity, Bioguidance, Minimum inhibitory concentration, *Plectranthus*

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See [https://www.researchgate.net/profile/Fredrick\\_Musila/publication/321182613\\_Antibacterial\\_and\\_antifungal\\_activities\\_of\\_10\\_Kenyan\\_Plectranthus\\_species\\_in\\_the\\_Coleus\\_clade/links/5a13aaf74585158aa3e63aaf/Antibacterial-and-antifungal-activities-of-10-Kenyan-Plectranthus-species-in-the-Coleus-clade.pdf](https://www.researchgate.net/profile/Fredrick_Musila/publication/321182613_Antibacterial_and_antifungal_activities_of_10_Kenyan_Plectranthus_species_in_the_Coleus_clade/links/5a13aaf74585158aa3e63aaf/Antibacterial-and-antifungal-activities-of-10-Kenyan-Plectranthus-species-in-the-Coleus-clade.pdf) more at: