

## PP 17 - Antimicrobial Effect of Four Medicinal Plants used in Unani Medicine on Selected Bacterial Pathogens

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**Background:** Infectious diseases have been a leading course of morbidity and mortality in the world. In western medicine antibiotics are used in the treatment of infectious diseases for decades. However, treatment with the antibiotics have become difficult, ineffective and complicated due to the increasing prevalence of multi - drug resistance in pathogenic microorganism as well as the undesirable side effects of antibiotics. Hence, there is a dire need to discover new antimicrobial agents with novel mechanism of action for new and re – emerging infectious diseases. In this respect, the plants used in Unani medicine could be explored as a potential source of new antimicrobials.

**Objectives:** The aim of this research is to identify the antimicrobial effect of four medicinal plants used in Unani medicine, i.e. *Cissus quadrangularis* (Heerassa), *Vernonia cinerea* (Monara kudumbi), *Mimosa pudica* (Nidikumba) and *Mikania cordata* (Vatupalu) against *Escherichia coli*, *Staphylococcus aureus* and *Pseudomonas aeruginosa*.

**Methodology:** The antimicrobial activity of the methanolic extracts of above plants were tested against standard cultures of *E.coli*, *S. aureus* and *P. aeruginosa* by the disc diffusion method according to CLSI guidelines. Ciprofloxacin (5 µg) and dichloromethane soaked filter paper discs were used respectively as the standard drug and negative control. The broth dilution method was employed to determine the minimum inhibitory concentration (MIC). Then minimum bactericidal concentration (MBC) was identified by plating the content of microplatewells in agar plates.

**Results and conclusions:** Only the methanolic extract of *M.cordata* showed zone of inhibition against *E. coli* and *S.aureus* in disc diffusion method at the defined concentration of 2000 µg /mL. However, the broth dilution method resulted antibacterial effect in all four plant extracts with MIC of 250 µg /mL against *S.aureus*, 62.5 µg /mL against *E. coli* and 500 µg /mL against *P. aeruginosa*. Therefore, the results of this study have shown that each tested plant extract exhibit antimicrobial activity agaisnt the tested bacteria

**Keywords:** antibacterial effect, plant extract, disc diffusion technique, zone of inhibition, minimum inhibitory concentration