

Antibacterial Effect of Selected Medicinal Plants Used in Ayurveda against Wound Infecting Bacteria

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Background: The increasing antimicrobial resistance exhibited by wound infecting bacteria has led to extensive research on the antimicrobial activity of selected medicinal plants.

Objective: To investigate and compare the antibacterial activity of five medicinal plants, *Asparagus falcatus* L./Hathavariya (Rhizome & roots), *Cinnamomum verum* J. Presl/Kurundu (Stem bark), *Coriandrum sativum* L./Koththamalli (Leaves), *Nigella sativa* L./Kaluduru (Seeds), *Trachyspermum involucreatum* (Roxb.) Maire/Asamodagam (Seeds), against common wound infecting bacteria *Pseudomonas aeruginosa* (ATCC 27853) and *Staphylococcus aureus* (ATCC 25923)

Methods: Total of 15 plant extracts were prepared in aqueous, ethanol and acetone and screened for antibacterial activity against each test strains triplicated by agar disk diffusion method with positive control. Average Zone of Inhibition (ZOI) was calculated. The Minimum Inhibitory Concentration (MIC) and Minimum Bacterial Concentration (MBC) were determined by broth dilution and drop plate methods respectively only for plant extracts which showed a zone of inhibition.

Results: Acetone extract of *Cinnamomum verum* J. Presl (average (\pm SD) ZOI of 6 (\pm 0.00) mm with MIC of 50 mg/ mL and MBC of 100 mg/ mL), ethanol extract of *Cinnamomum verum* J. Presl (average ZOI of 10.33 (\pm 0.58) mm with MIC of 3.125 mg/mL and MBC of 6.25 mg/ mL), and acetone extract of *Nigella sativa* L. (average ZOI of 10.33 (\pm 0.58) mm with MIC of 3.125 mg/ mL and MBC of 6.25 mg/ mL) have shown antibacterial activity on *Pseudomonas aeruginosa*. Ethanol extract of *Cinnamomum verum* J. Presl showed antibacterial activity (average ZOI of 19.66 (\pm 0.58) mm with MIC of 100 mg/ mL and MBC of >100 mg/ mL) on *Staphylococcus aureus*.

Conclusions: Ethanol and acetone extracts of *Cinnamomum verum* J. Presl and acetone extract of *Nigella sativa* L. were found to be effective against tested strains while remaining plant extracts did not possess antibacterial effect against tested strains.

Keywords: Antibacterial, Ayurveda, Bacteria, Plants, Wound.