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Evaluation of antibacterial activity in *Nelumbo nucifera* white flower

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Nelumbo nucifera is commonly known as "Lotus" which is highly valued in aquatic horticulture in Sri Lanka, and broadly used in the Ayurveda and Siddha systems of medicines. Extracts of different parts of this plant have shown different therapeutic effects due to their phytochemical constituents. Aqueous methanolic extracts (80%) of petals and stamens were screened separately for *in vitro* antibacterial activity. Well diffusion method and Muller Hinton Broth (MHB) dilution method in microplates were used to determine Minimum Inhibitory Concentration (MIC) and agar plates were used to determine Minimum Bactericidal Concentration (MBC) against two Gram-positive (*Staphylococcus aureus* and *Staphylococcus saprophyticus*) and two gram-negative bacterial strains (*Escherichia coli* and *Pseudomonas aeruginosa*). Vancomycin and ceftriaxone were used as the positive controls for gram positive and gram-negative microorganism, respectively and DMSO (dimethyl sulphoxide) as negative control. Petal and stamen extracts showed somewhat similar antibacterial activity, where the zone of inhibition (mm) was higher for gram-negative organisms (14.3 ± 0.6) than gram-positive organisms (11.7 ± 0.6). Methanolic extract of white lotus petals and stamens showed comparatively good antibacterial activity against all four organisms. Results emphasized that lotus flower extracts have the potential to be used as antibacterial agent and the importance of the use of natural products to treat pathological conditions.

Keywords: *Nelumbo nucifera*, well diffusion method, Minimum Inhibitory Concentration (MIC), Minimum Bactericidal Concentration (MBC) and dimethyl sulphoxide (DMSO)

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