

Evaluation of Antibacterial Activity of Different Extracts of *Ipomoea Aquatica* Leaves against *Staphylococcus Aureus* and *Streptococcus Pyogenes*

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Abstract

The skin can be vulnerable to various microbial infection. Although antibiotics are clinically proven to be useful in the treatment of bacterial skin infections, they are largely subjected to antibiotic resistance and adverse effects. This has led to the screening of several medicinal plants for their potential antimicrobial activity since they are less expensive, has reduced occurrence of adverse effects and widespread availability. The aim of this research will focus on evaluating the antibacterial activity of different extracts of *Ipomoea aquatica* leaves against *Staphylococcus aureus* and *Streptococcus pyogenes* that causes skin infections. Leaves were extracted separately with 95% methanol and 95% ethanol using maceration process. Phytochemical screening was done for each extract and the minimum inhibitory concentration (MIC) was determined for each extract against both bacteria using 10 different concentrations ranging from 10mg/ml up to 100mg/ml via disc diffusion method in triplicates. Two concentrations above the MIC from each extract were selected and antibacterial assay of the different extracts against the two bacteria respectively was performed using disc diffusion method in triplicates. MIC for methanolic extract against both bacteria was 10mg/ml, while MIC for ethanolic extract was 10mg/ml against *Staphylococcus aureus* and 30mg/ml against *Streptococcus pyogenes*. Methanolic extract of the plant at a concentration of 90mg/ml and 100mg/ml was statistically significant against *Streptococcus pyogenes* with a significance value of 0.00 ($p < 0.05$), with 100mg/ml having larger mean inhibition zone of $17.00\text{mm} \pm 0.00\text{mm}$ than 90mg/ml ($14.33\text{mm} \pm 0.58\text{mm}$). Statistical analysis was performed using one way ANOVA (Tukey's Test). Both methanolic and ethanolic extract of the leaves has positive antibacterial activity against both *Staphylococcus aureus* and *Streptococcus pyogenes* at different concentrations.

Keywords:

Ipomoea aquatica, *Staphylococcus aureus* and *Streptococcus pyogenes*