

Evaluation of Antibacterial Activity of Different Extracts of *Ipomoea Aquatica* Leaves against *Escherichia Coli* and *Salmonella Typhi*

A. Padmavathy, Rasny M.R.M, Reyadh R, and Jiyauddin Khan
Management & Science University

Corresponding author:
Email: mohd_rasny@msu.edu.my

Abstract

Bacterial infections have become a major cause of morbidity and mortality over the recent years and gastrointestinal infections are one of the common diseases caused Gram-negative bacteria such as *Escherichia coli*, *Shigella sp.* and *Salmonella typhi*. Treatment involves usage of wide spectrum antibiotics like fluoroquinolones often leads to development of antibiotic resistance and by implementing medicinal plants usage in treating diseases are believed to be effective against bacteria, the need for conventional therapy and risks of antibiotic resistance are reduced. *Ipomoea aquatica* (Family: Convolvulaceae) are commonly known as kangkung leaves. Various pharmacological activities such as anti- hyperglycaemic, anti- inflammatory and diuretics were explored except for its antibacterial activity. The aim of this study is to evaluate the antibacterial activity between methanolic and ethanolic extracts of *Ipomoea aquatica* leaves against *Escherichia coli* and *Salmonella typhi*. *I. aquatica* leaves were extracted with 95% methanol and 95% ethanol and their phytochemical properties were determined. MIC was determined for both methanolic and ethanolic extracts of *Ipomoea aquatica* against *Escherichia coli* and *Salmonella typhi*, using concentrations ranging from 10mg/ml up to 100mg/ml via disc diffusion method. Two concentrations were chosen from each extract to evaluate antibacterial activity using disc diffusion method with ciprofloxacin as positive control and distilled water as the negative control, done in triplicates. Data was entered on SPSS statistics version 23 and analysed using one way ANOVA and post hoc Tukey. Based on ANOVA, antibacterial activity was more profound in concentrations from methanolic extracts of *Ipomoea aquatica* leaves against *Salmonella typhi*, where the both concentrations at 40mg/ml and 100mg/ml showed significant antibacterial activity against *Salmonella typhi* when compared to the positive control Ciprofloxacin (5mg/disc), producing a significant value $p < 0.05$. Both methanolic and ethanolic extracts of *Ipomoea aquatica* leaves produced antibacterial activity against *Escherichia coli* and *Salmonella typhi*.

Keywords:

Ipomoea aquatica, Antibacterial activity, Methanolic extract, Ethanolic extract, Minimum Inhibitory Concentration