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In vitro* evaluation of antibacterial activity of leaf extracts of *Atalantia ceylanica

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Background: *Atalantia ceylanica* plant has been recognized as a multi-purpose medicinal plant which is widely applied to treat respiratory tract infections. Recently, this plant has gained popularity among people for its perceived role in preventing coronavirus infection.

Objective: The study aimed to investigate antibacterial activity of different solvents extractions of leaf of *A. ceylanica* plant against *Staphylococcus aureus* (ATCC 25923) and *Pseudomonas aeruginosa* (ATCC 9027).

Methods: Leaves of *A. ceylanica* were collected from Medagama in the Monaragala district and shade dried. It was powered and extracted using maceration technique with methanol and acetone separately. The antibacterial activity of leaf extracts of *A. ceylanica* was determined against *S. aureus* and *P. aeruginosa* by using agar well diffusion method by employing Amoxicillin as the standard. Data were analyzed using one-way ANOVA at 5% significance level. Preliminary phytochemical screening was performed on the extracts of leaf.

Results: Mean values of zones of inhibition against the *S. aureus* for methanol extracts of leaves was 16.67 ± 1.53 mm, whereas the acetone extract of leaves was shown 18.34 ± 0.58 mm at concentrations of 100 mg/mL. Mean values of inhibition zones against the *P. aeruginosa* for methanol extract of leaves was 18.34 ± 0.58 mm, whereas the acetone extract of leaves was found to be 18 ± 0.00 mm at concentrations of 100 mg/mL. The inhibitory effects showed by the standard and extract of leaves of *A. ceylanica* differed significantly ($P < 0.05$) and exhibited superior antibacterial activity. Methanol and acetone extractions of leaves of *A. ceylanica* consist of important phytochemicals compounds such as alkaloids, flavonoids, glycosides, polyphenol, sterol and tannins.

Conclusions: The methanol and acetone extracts from *A. ceylanica* leaves have antibacterial potential, might be due to the presence of potent phytochemical compounds. These findings highlight the plant's potential for developing novel antimicrobial agents.