

Antibacterial activity of acetone fractions of the root of *Vateria copallifera* against *Staphylococcus aureus* and *Escherichia coli*

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Vateria copallifera is an endemic plant to Sri Lanka, and it is used traditionally for the treatment of wound healing. Therefore, this study focused on the antibacterial activity of fractionations obtained from the acetone extract of roots of *V. copallifera*. The root was collected and authenticated by the national herbarium. The powdered root was macerated with acetone and the solvent was removed using a rotatory evaporator under reduced pressure. The dried crude extract was analysed in the thin layer chromatography, followed by silica flash column chromatography, and obtained as five distinct fractions (F1, F2, F3, F4, F5). The antimicrobial activity of fractions was tested against *Staphylococcus aureus* (ATCC 25923) and *Escherichia coli* (ATCC 25922) using the agar well diffusion method and co-amoxiclav as positive control and acetone as negative control. A preliminary phytochemical screening was carried out for antimicrobial active fraction F5. The diameter of the zone of inhibition (mm) was expressed as Mean \pm Standard Deviation of the mean and the antimicrobial activity of extracts was analyzed with one-way ANOVA. F3, F4 and F5 showed antibacterial activity against both organisms, however F1 and F2 showed antibacterial activity against only for *S. aureus*. Among the five fractions, F5 demonstrated better activity compared to the others for *S. aureus* (17.67 ± 0.57 mm) and *E. coli* (16.00 ± 0.00 mm) while the zone of inhibition for co-amoxiclav was 24.13 ± 0.74 mm and 34.46 ± 0.63 mm respectively. Phytochemical analysis indicated that the F5 showed positive results for polyphenol. One-way ANOVAs revealed that the antimicrobial inhibitory effects showed by standard and fractions differed significantly ($P < 0.05$). This study revealed that fractionation F5 showed better antibacterial activity against the *S. aureus* and *E. coli* than other fractions and possibly phenolic compound was responsible for its antibacterial activity.

Keywords: Acetone fraction, Antibacterial activity, Phytochemical analysis, Root, *Vateria copallifera*

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