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Evaluation of the antibacterial effect of *Acronychia pedunculata* fresh extract against *Staphylococcus aureus*: a study in vitro

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Abstract

In vitro antibacterial activity of fresh extracts of stem bark, leaves and combined sample of *Acronychia pedunculata* found in Sri Lanka were investigated against *Staphylococcus aureus* (ATCC 25923) and found the Minimum Inhibitory Concentration. Kirby Baurer Well diffusion method of antibacterial Susceptibility Testing was used to determine antibacterial activity of each fresh extract. Dilution series for Minimum Inhibitory Concentration were prepared. Amoxicillin and distilled water were used as positive and negative control respectively. Zone diameters were interpreted and data were statistically analyzed. The results showed that there was antibacterial effect of each sample. The highest zone diameter was observed for the combined sample; fresh extracts of stem bark and leaves (11.67mm). This could be due to the synergetic activity of each compound from each plant material used in this study. Fresh extracts of stem bark showed the second most (11mm) and fresh extracts of leaves the least (9mm). As fresh extracts of stem bark and leaves of *Acronychia pedunculata* (combined sample) showed the highest activity, dilution series from that sample were prepared. The minimum inhibitory concentration of combined sample for the growth of *Staphylococcus aureus* was 10⁻² mg/ml. This could be further investigated for more gram positive and negative bacterial and fungal species. It is worth to investigate each extract individually using various chromatographic techniques and identify the active ingredients separately.

Keywords: *Acronychia pedunculata* fresh extract, *Staphylococcus aureus*, Minimum Inhibitory Concentration

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