

Screening for Antibacterial Activity of *Rhinacanthus* Species Used in Traditional Ayurvedic Medicine in Sri Lanka

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The antibacterial activity of *Rhinacanthus nasutus* and *R. polonnaruwensis* (Family Acanthaceae) used in traditional Ayurvedic medicine in Sri Lanka were tested against standard Gram-negative and Gram-positive bacteria and clinically isolated Gram-negative and Gram-positive bacteria. The study was carried out on six species of bacteria: *Escherichia coli*, *Staphylococcus aureus*, *S. saprophyticus*, *Pseudomonas aeruginosa*, *Salmonella typhi* and *Shigella flexi*. A water extract of the concentration of 0.2 µl/ml of *R. nasutus* inhibited growth of all standard Gram-positive bacteria, whereas, 0.2 µl/ml extract of *R. polonnaruwensis* inhibited the growth of standard Gram-positive *S. aureus* NCTC 6571. Clinically isolated *S. saprophyticus* was inhibited by both *R. nasutus* (> 0.1 µl/ml) and *R. polonnaruwensis* (0.2 µl/ml). However, none of the tested concentrations of both *Rhinacanthus* species inhibited the growth of any Gram-negative bacteria.

It can be concluded that both *R. nasutus* and *R. polonnaruwensis* studied have antibacterial properties against Gram-positive bacteria. Previous studies show that 75% aqueous ethanolic extract of *R. nasutus* used was found to have potent anti-bacterial effect on many Gram positive bacteria, but no inhibitory effect on gram negative bacteria. Rhinacanthin-C, rhinacanthin-D and rhinacanthin-N possessed antifungal, antibacterial, antiviral, anti-inflammatory, anti-allergic and anti-cancerous properties. Out of the two *Rhinacanthus* species found in Sri Lanka, *R. nasutus* has higher antimicrobial activity. The plant extract taken by boiling the leaves in water was effective against most standard Gram-positive bacteria and Gram-positive bacteria isolated from wounds of patients.