

ACTIVITY OF TWO MEDICINAL PLANTS AGAINST SOME  
BACTERIA CAUSING SKIN AND WOUND INFECTIONS IN  
HUMANS

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# ACTIVITY OF TWO MEDICINAL PLANTS AGAINST SOME BACTERIA CAUSING SKIN AND WOUND INFECTIONS IN HUMANS

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Bark and leaves of *Acronychia pedunculata* and *Adenantha pavonina* are used in ayurvedic herbal preparations to treat skin diseases and wound infections, some of which can be of bacterial origin. Therefore, bark and leaves of both these plants may have antibacterial activity against bacteria, which cause skin and wound infections.

Resistance of bacteria to most antibiotics used in skin and wound infections is a major problem today. It is important to find new antibiotics for skin and wound infections. In the present study, the antibiotic activity of the bark and leaves of *A. pedunculata* and *A. pavonina* was examined using the well method. Bark and leaves from both plants were separately extracted into methanol and water, simulating, whenever feasible, the conditions of traditional drug preparation. The extracts were examined for antibacterial activity at 10,000 µg/ml concentration using the following bacteria: *Staphylococcus aureus* ATCC 25923, four strains of methicillin resistant *Staphylococcus aureus* (MRSA), *Escherichia coli* NTCC 10418, *Enterococcus faecalis* NTCC 12697 and *Pseudomonas aeruginosa* NTCC 10662. The antibacterial activity was further examined by combining the extracts.

All methanol extracts and most of water extracts of the bark and leaves of *A. pedunculata* and *A. pavonina* showed varying degrees of antibacterial effect against organisms tested. Significantly, high antibacterial activities were observed for the following extracts: the methanol extract of the bark of *A. pedunculata* against

*S. aureus*, four strains of MRSA and *E. faecalis*, the methanol extract of the leaves of *A. pavonina* against *E. coli* and the methanol extract of the bark of *A. pavonina* against *P. aeruginosa*. The inhibition zone for *E. coli* NTCC 10418 had scattered colonies implying a possible bacteriostatic effect or there may be a mixture of sensitive and resistant *E. coli*.

Soaking the bark of *A. pedunculata* in water overnight prior to water extraction enhanced the antibacterial activity of the extract. However, soaking of the leaves of *A. pedunculata* and the leaves and bark of *A. pavonina* did not improve the antibacterial activity of the respective water extracts.

The combination of methanol extracts of both bark and leaves of *A. pedunculata* enhanced the antibacterial activity implying the possibility of synergistic effects when different plant parts were used in traditional drug preparation.