

ANTICANDIDAL ACTIVITY OF *ACRONYCHIA PEDUNCULATA*

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Candida species such as *C. albicans*, *C. glabrata*, *C. parapsilosis* and *C. krusei* cause serious human infections. Extensive use of current antifungal agents has led to the development of multiple drug resistance requiring alternative treatment procedures and new antifungal drugs. Exploring medicinal plants for anticandidal activity is an important strategy in the search for new antifungal agents. The plant parts of *Acronychia pedunculata* (L.) Miq. (Rutaceae) are used to treat several diseases such as sores, scabies, ulcers, and intestinal infections in traditional medicine. Steam distillates and extracts of *A. pedunculata* have shown antibacterial activity against some human pathogenic bacteria and phytopathogenic fungi. The objective of this study was to investigate the antifungal activity of leaf and stem-bark extracts of *A. pedunculata* against five *Candida* species responsible for some human infections.

Methanol extracts of leaves and stem-bark of *A. pedunculata* were prepared by Soxhlet extraction and methanol was removed by rotary evaporation. The concentrated extracts were stored in the refrigerator and investigated for anticandidal activity by the well diffusion method. Leaf distillate, prepared by steam distillation, was subjected to the disc diffusion assay. Dimethylsulfoxide (DMSO) and 60% aqueous DMSO were used as negative controls and ketoconazole as a positive control. The antifungal assays were performed in triplicate against *C. albicans* (ATCC 90028), *C. krusei* (ATCC 6258), *C. parapsilosis* (ATCC 22019), *C. tropicalis* (ATCC 13803), *C. glabrata* (ATCC 90030) and 8 clinical *Candida* isolates. Three of the unknown clinical isolates were identified as *C. albicans* by the germ-tube assay. The minimum inhibitory concentration (MIC) values for three *Candida* species were determined by the agar dilution assay.

All standard and clinical *Candida* isolates displayed an inhibition zone width of ≥ 3 mm for both methanol extracts at 25 mg/ml except *C. krusei*, which had 1.5-2 mm zone width. Methanol extracts had considerable anticandidal activity even at 10 mg/ml. The leaf steam-distillate however, was not active against any of the *Candida* species at a concentration of 10 mg/ml. The MIC values of the stem-bark methanol extract for *C. albicans*, *C. krusei* and *C. glabrata* were 6.4, 6.4 and 0.16 mg/ml, respectively. The corresponding values of the leaf methanol extracts were 0.8, 0.13 and 0.8 mg/ml. The variation in the magnitude of sensitivity shown by the different species may be due to inter-species differences among *Candida* species in responding to antifungal agents. Our results of anticandidal properties together with those from previous antibacterial studies reveal that *A. pedunculata* has the potential to serve as a source for preparing broad spectrum antimicrobial formulations