

(ID 093)

Antifungal Activity of Selected Indigenous Medicinal Plants in Sri Lanka Against Candida Infections

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Abstract

Candida infections have been recorded as an emerging health concern among immune-compromised patients, infants and pregnant women in Asia, Africa and Europe. Skin diseases, genital infections, candidiasis and candidemia caused by overgrowth of symbiotic *Candida* species in the human body are treated by antifungal drugs. The common drugs viz., fluconazole, flucytosine, amphotericin B, nystatin, etc. are responsible for more side effects in the human body while *Candida* species are indicating a resistance towards them. Therefore, the continuous discovery of antifungal compounds against Candida infections is an essential process. Thus, the current study focused on the determination of the antifungal activity of water extracts of selected indigenous medicinal plants in Sri Lanka towards Candida infections. Three common indigenous medicinal plants; *Cyperus rotundus* (roots, tubers, leaves and flowers), *Acalipha indica* (roots, stem, leaves and flowers) and *Aloe barbadensis* Miller (gel and leaves) were collected and their water extracts (10 g/25 mL) were screened for the antifungal activity against two common *Candida* species; *Candida glabrata* and *Candida parapsilosis* using disk diffusion method. Briefly, the pathogenic bacterial lawns were prepared by spreading equalized solutions of *C. glabrata* and *C. parapsilosis* on Muller Hinton Agar supplemented with 2% glucose. Sterile paper disks soaked with 30 µL of water extracts of each plant part were placed on pathogen lawns. Sterile distilled water was used as the negative control. The plates were incubated at 37° C overnight and observed for clear zone formation. According to the results, the water extract of *C. rotundus* tubers indicated an inhibitory action by giving clear inhibition zones against both tested *Candida* species. All other water extracts of medicinal plants indicated negative inhibitory actions against tested *Candida* species. The results revealed that *C. rotundus* tubers consist of antifungal activity against *C. glabrata* and *C. parapsilosis*. Hence, *C. rotundus* tubers can be used as an effective treatment for infections caused by the tested *Candida* species.

Keywords: Antifungal activity, Candida infections, Indigenous medicinal plants, Cyperusrotundus, Water extracts