

**TITLE:** Evaluation of exoenzymatic inhibition by extracts and fractions of *Artabotrys brachypetalus* Benth. against *Candida* spp.

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## **ABSTRACT:**

Oral candidiasis is an infection caused by *Candida* spp. which mainly affects immunocompromised individuals. The *Candida* genus has the ability to produce exoenzymes such as hemolysin, phospholipase and proteinase with pathogenic mechanisms to facilitate their installation, maintenance and dissemination. *Artabotrys*, is described with antifungal action against *C. albicans* and *Aspergillus* spp. This study aimed to determine the ability of crude ethanolic root extract and ethyl acetate, dichloromethane, hydromethanolic and n-butanol fractions to inhibit and/or reduce the hemolysin, phospholipase and proteinase activities of *Candida* spp. at sub-inhibitory concentrations ( $\frac{1}{2}$  MIC) against *C. albicans* (ATCC 90028), *C. glabrata* (ATCC 2001), *C. tropicalis* (ATCC 13805), The activities were evaluated by the presence of halo around the colonies that were measured to calculate the inhibition index (Hc), determined by the ratio between the total diameter (halo + colony) and the colony diameter. The plates were checked for the appearance of a precipitation zone around the colonies, considered by Hi (hemolytic zone), Pz (phospholipase zone) and Prz (proteinase zone). The significance of enzyme inhibition was determined by the analysis of the ANOVA One Way test followed by the Kruskal Wallis test and P values <0.05 were considered significant. The exposure of *C. glabrata* (ATCC 2001) had a significant reduction in hemolytic activity compared to the control, reaching an inhibition of 45.9% ( $p \leq 0.03$ ) after exposure of  $\frac{1}{2}$  MIC to the hydromethanolic fraction. *C. albicans* (ATCC 90028) had a significant reduction in phospholipase activity ( $p \leq 0.03$ ) after exposure to the dichloromethane fraction, finally, exposure of *C. albicans* (ATCC 90028) and *C. tropicalis* (ATCC 13805) had a significant reduction in proteinase activity, with emphasis on the dichloromethane fraction that caused a 35.8% inhibition of activity ( $p \leq 0.03$ ). crude extracts and fractions of *A. brachypetalus* show promising results in inhibiting exoenzymatic activity by *Candida* spp.

**Keyword:** *Artabotrys brachypetalus* Benth., *Candida* spp.; Exoenzimas; Virulence.

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