

**TITLE:** ANTIMICROBIAL AND ENZYME ACTIVITY OF ENDOPHYTIC FUNGI ISOLATED FROM TROPICAL MANGROVE FORESTS

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**ABSTRACT:**

The mangrove is an ecosystem of transition between the terrestrial environment and the marine environment, typical of tropical and subtropical regions. Many microorganisms have already been isolated from the mangrove, among them, the fungi endophytic fungi that can produce substances with roles not yet known. These fungi colonize, form intracellular or intercellular, the interior of the tissues of the plants, since the root, stem and even leaves, without presenting the effect of pathogenic in the host. Endophytic microorganisms found in the mangroves showed great biotechnological potential, producing new compounds such activities, antimicrobial, enzymatic, leishmanicides, antitumor, antiinflammatory, analgesic, diuretic and wound healing. In this context, the aims of this study were: to evaluate the antimicrobial and enzyme activity of 22 strains of *Diaporthe* sp. and *Phomopsis* sp. isolated endophytically from three different species of mangrove (*Rhizophora mangle*, *Avicennia schaueriana* and *Laguncularia racemosa*) found in the Brazilian state of São Paulo. The antimicrobial activity of the endophytic strains was tested against *Candida albicans*, *Escherichia coli*, *Staphylococcus aureus*, *Staphylococcus saprophyticus* and *Pseudomonas aeruginosa*. Also, to the same 22 endophytic strains, the production of the following enzymes was analyzed: amylase, cellulase, protease, lipase and esterase. The results indicated that of strains tested, 5 of them showed activity against *E. coli*, 6, *S. saprophyticus*, 4 against *P. aeruginosa*, 1 against *C. albicans*. For the enzyme activity, only 4 endophytic strains showed negative results. Among the other 18 isolates, each of them presented a production of at least one enzyme of the 5 tested, being 1 for activity amylolytic, 11 cellulolytic, 2 proteolytic, 13 lipolytic and 2 esterasica. These results indicated the biotechnological potential of these endophytic strains for antimicrobial and enzyme activity.

**Keywords:** bioactive molecules, bioprospecting, enzymes, pathogens

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