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ANALYSIS OF THE ANTIFUNGAL ACTIVITY OF LIBIDIBIA FERREA AND PIPER BACCANS EXTRACTS AGAINST THE ZONOTIC FUNGUS SPOROTHRIX SPP

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RESUMO

Sporothrix spp. is a fungus found in temperate zones and can cause sporotrichosis, a common implantation mycosis worldwide. Incidents of contamination occur when domestic cats scratch trees and then inoculate the fungus into other animals or humans. Recently, the fungus was detected in the Amazon, where it is nonative, evolving into a public health problem with 1,998 confirmed cases in animals in 2023. Given this scenario, exploring phytotherapeutic resources from the Amazon to combat the fungus has become essential. Extracts of *Piper baccans* were produced, with milled leaves subjected to a Soxhlet extraction apparatus containing hexane for 24 hours, followed by methanol for another 24 hours. The extract was filtered to remove chlorophyll and subjected to liquid-liquid partitioning in hexane, chloroform, and ethyl acetate, resulting in four fractions. The chloroform fraction, at a concentration of 10 mg/ml in dimethyl sulfoxide (DMSO), was used in the experiment. Cultures of *Sporothrix* spp. from a stray domestic cat from the Federal University of Amazonas Campus were collected using a sterile swab and established in Sabouraud medium, purified by exhaustion, and observed by optical microscopy. Assays were conducted in triplicate at 25 °C and 37.5 °C, using the cup plate technique to test the inhibition capacity of the extracts, with amphotericin B as a positive control and DMSO as a negative control. The results showed that the *P. baccans* extract fraction inhibited the fungus at different concentrations, ranging from 25% to 100% of the initial concentration at both temperatures, generating halos observed macroscopically and measured with a caliper, demonstrating inhibition areas with an average diameter of 0.7 cm at 10 mg/ml in both scenarios and 0.1 cm at 2.5 mg/ml at 37.5 °C and 0.2 cm at 25 °C. Toxicity tests conducted on VERO cell lines using the MTT assay (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide) revealed no toxic effects. The results indicate that the *P. baccans* extract exhibits antifungal activity against *Sporothrix* spp. and is a promising candidate for future research aimed at combating the zoonotic fungus *Sporothrix* spp. The progression of the research aims to optimize concentrations and application methods and formulations, as well as conduct clinical trials to validate efficacy and safety in real-world scenarios.

PALAVRAS-CHAVE: Sporotrichosis, Amazon, Phytotherapy, zoonosis, Biodiversity

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