Title: ANTIMICROBIAL ACTIVITY OF FUNGAL SPECIES STORED IN FUNGI COLLECTION OF AMAZON OF THE INSTITUTE LEÔNIDAS AND MARIA DEANE-FIOCRUZ.

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Abstract:

Currently, infectious diseases are considered a worldwide problem and the leading cause of deaths in the population. Although there are wide range of next-generation antibiotics, there are increasingly common occurrence of multi-drug resistant microorganisms to drugs. Thus making it necessary to biotechnological applications for new drugs that can combat diseases caused by bacteria and yeasts. With the importance of the search for new antimicrobial agents, this study aimed to evaluate the antimicrobial profile of mold obtained from the soil of the RDS Mamirauá located in Tefé-Amazon-Brazil. To conduct the study were selected seventeen isolates of *Penicillium* (seven), *Aspergillus* (five), *Paecilomyces* (three) and *Fusarium* (two). They were reactivated in Petri plates containing Malt Extract Agar (MEA), kept in an incubator BOD in temperature to 28ºC in seven days and subsequently reactivated Yeast Extract and Sucrose Agar (YES) in the same conditions cited. The antimicrobial activity was evaluated by the test agar block, based on the halos of inhibition of formation producing micoorganisms on indicators through the diffusion of bioactive compound in solid medium. The tests used microorganisms belonging to the species *Staphylococcus aureus* (CBAM 324), *Escherichia coli* (CBAM 474) and *Candida albicans* (CFAM 1342)**.** The bacteria cultured on Mueller Hinton Agar at 37ºC for 24 hours and yeast grown on Sabouraud Dextrose Agar at 37ºC for 48 hours. And for genetic characterization of fungal isolates to the species level, there was molecular biology. Of the seventeen cultures, 58,7% had growth inhibition test microorganisms: 23,5% inhibited front *Candida albicans* (*Aspergillus flavus*, *Penicillium liani* e *Penicillium rubens*), 23,5% inhibited front *Staphylococcus aureus* (*Paecilomyces lilacinus*, *Aspergillus flavus*, *Penicillium liani* e *Fusarium solani*) and 11,7% inhibited front *Escherichia coli* (*Aspergillus tubingensis* e *Paecilomyces lilacinus*). The results acquired from filamentous fungi can be a stimulus for research of antimicrobial metabolites and application in the pharmaceutical industry.

Keywords: antimicrobial, biotechnological applications, filamentous fungi

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