

CLADINA DENDROIDES OCCURRING IN THE BRAZILIAN AMAZON: AN ALTERNATIVE FOR PRODUCTION OF ANTIMICROBIAL SUBSTANCES

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The search for antimicrobial substances has been intense due to large capacity of microbial resistance. Aiming to discover new substances inhibiting the growth of pathogenic microorganisms were evaluated extracts of *Cladina dendroides*, lichenized fungus known for its biological properties. *Cladina dendroides* samples were collected in the Guajará Campina, municipality of Acara, Pará, Brazil, and extracted with ether, chloroform and acetone. The antimicrobial activity of the extracts was evaluated using the agar diffusion test against *Staphylococcus aureus*, *Bacillus subtilis*, *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Mycobacterium phlei*, as representatives of Gram positive, Gram negative and acid-fast bacteria. Antifungal tests were performed with *Microsporum gypseum*, *M. canis*, *Trichophyton rubrum*, *T. tonsurans*, *T. mentagrophytes*, *Epidermophyton floccosum*, *Aspergillus fumigatus*, *A. flavus*, *Rhizopus sp*, *Candida albicans* and *C. parapsilosis*, as representatives filamentous fungi and yeast. Microbial suspensions were inoculated on Petri plates containing Mueller-Hinton agar for bacteria and Sabouraud agar for fungi. Paper disks 6 mm in diameter were impregnated with 20 µL of each lichen extract at a concentration of 4mg / mL and deposited on the medium previously inoculated. As a positive control the cephalothin and amikacin antibiotics were used for bacteria and amphotericin B for fungi. The experiments were incubated at 36°C and 30°C for bacteria and fungi, respectively, and evaluated by the formation and size of the inhibition zone around the discs. It was observed that the extracts of *C. dendroides* were inactive against 100% of tested fungi. On the other hand, inhibited the growth of all bacteria except *P. aeruginosa*, which showed resistance to all the extracts evaluated. Inhibition zones ranged from 8 to 17 mm, and the ether extract had the best antimicrobial potential, inhibiting Gram positive, Gram negative and acid-fast bacteria. This demonstrates that *C. dendroides* produces substances with broad spectrum antibacterial and the ether is the best solvent extractor these substances. The results revealed that *C. dendroides* is a promising species in producing antibiotic substances. Further studies aim to identify the active principles of the species and to determine the minimum inhibitory concentration able to inhibit bacterial growth.

Keywords: *Cladina dendroides*, Antimicrobial activity, Lichenized fungi.

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