Title: LICHENIZED FUNGI EXTRACTS OCCURRING IN THE AMAZON REGION WITH ACTION ON MULTIRESISTANT BACTERIA

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Abstract

The problem of bacterial resistance to commercially available drugs has become hard treating various infectious diseases. Lichenized fungi, also known as lichens, represent an alternative therapy due to the production of substances with proven antimicrobial activity against various types of microorganisms. Based on the above and the availability of species of lichens still unknown in the Amazon region, this study aimed to evaluate the antibacterial action of crude extracts of *Parmotrema* sp., *Leptogium* sp. and *Cladina dendroides* collected in the State of Pará and *Cladonia substellata* and *Cladonia crispatula* collected in the State of Acre. The species were extracted by exhaustion cold with solvents chloroform and acetone. The extracts were tested against multi-drug resistant strains of *Pseudomonas aeruginosa* and *Staphylococcus aureus* by disk diffusion technique. Bacterial suspensions corresponding to 0.5 McFarland standard, were seeded in Petri plates containing Mueller-Hinton agar. Paper disks 6 mm in diameter were impregnated with 20 uL of each lichen extract at a concentration of 4mg / mL and deposited on the medium previously seeded. The experiments were incubated at 36oC for 24 hours and evaluated by the formation and size of the inhibition zones around the discs. The tested multiresistant bacteria showed sensitivity to the lichen extracts, especially the extracts of *C. substellata* and *C. crispatula* that produced inhibition zones ranging from 13 to 20 mm in diameter against *S. aureus*, and 8 to17 mm for *P. aeruginosa*. Considering that multiresistant bacteria are a serious public health problem, mainly *P. aeruginosa* and *S. aureus*, which are commonly associated with difficult to control infections, the data found here represent an initial stage in the discovery of natural antibiotics able to control the growth of these bacteria. Further studies aim to isolate and identify the active principles of species and produce it from cell immobilization.

Key words: Multidrug-**resistant bacteria, lichens, lichenized fungi, Amazon.**

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