TITLE: INVESTIGATION OF ANTIFUNGAL POTENTIAL OF INTRACELLULAR EXTRACTS OF CYANOBACTERIA ISOLATED FROM AMAZONIAN ENVIRONMENTS

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ABSTRACT: Cyanobacteria have been gaining great scientific visibility because of their biotechnological potential, which involves a wide range of bioactive compounds. Considering that some fungal infections are common, and the resistance of some fungal species has been observed, the development of this work aimed to explore the antifungal potential of intracellular extracts of cyanobacteria from amazonian environments, targeting some pathogenic fungal species. Three cyanobacterial strains (CACIAM 05, 07 and 19) from Lake Bolonha and from Tucuruí Hydroelectric Power Plant were used, resulting in a total of twelve intracellular extracts, obtained by fractionation in strata C18-E (55um, 70A) 1g/20mL, with solvents of different polarities. Statistical analysis was done considering the arithmetic mean of the values and the results were expressed by tables. The obtained fractions were tested against six fungal species (Candida albicans, Candida tropicalis, Candida guilliermondii, Candida parapsilosis, Fusarium oxysporum and Aspergillus niger). The results of the ARI assay showed that extract 2 against Candida guilliermondii and extract 9 against Candida parapsilosis were the ones that obtained the higher percentages of CFU reduction (26.89% and 23.41%), respectively. The lipid composition of extracts 2 and 9, determined by GC/MS, showed that palmitic acid, and others, such as oleic acid, palmitoleic acid, methyl palmitate, phytol and linoleic acid, were the lipids detected in greater abundance. Eight lipids present in extract 2 were not identified by CG/MS, and together they corresponded to a percentage in area equal to 9.51%, suggesting that strains from Amazonian rivers have the potential to produce antifungal compounds, as well as others possible substances not yet described in the literature.

Keywords: Cyanobacteria, Intracellular Extracts, Antifungal Activity, Amazonian Environment.

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