

TITLE: EVALUATION OF ANTIOXIDANT ACTIVITY OF FUNGAL EXTRACTS FROM THE AMAZONIAN BIOME

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ABSTRACT: The increase of biological bioprospection in the world by new natural antioxidants, is necessary nowadays due to the increase of diseases such as cancer, atherosclerosis, cerebral ischemia and ageing, caused by the cumulative effect of free radicals in the organism. Therefore, this research evaluated the antioxidant activity of 44 fungal cultures of genus *Aspergillus* and *Penicillium* stored in Amazonian Fungi Collection – CFAM. The selected cultures were reactivated and subjected to cold extraction of biocompounds in extractor solvent and the determination of antioxidant activity of the obtained extracts was evaluated by the Radicals Capture DPPH method. For this rehearsal in microplates with 96 wells, it was added 40 µL of each extract, diluted in methanol and 250 µL of DPPH solution. For the control, 40 µL of methanol and 250 µL of DPPH solution and for the white 40 µL of each sample and 250 µL of methanol solution. The microplate was protected from the light's direct exposure and after 10 minutes the absorbance readings were done in microplate spectrophotometer (Molecular Devices, Spectramax Plus model) in 517nm. Ascorbic acid and quercetin were used as standards. The percentage of radicals kidnapping DPPH was measured through the sample's values of absorbance decay and control. Based in the obtained results, it was verified that among the evaluated fungal extracts, 73% (32) presented promising antioxidant activity above 50%. Among these 36% (16) produced metabolites with antioxidant activity close to quercetin standard, reaching 90 to 96% of free radicals capture while the standard reached 98,98% at 40 µg/mL. From the 16 samples with AA above 90%, 12 belong to the genus *Aspergillus* and 4 of the genus *Penicillium*. According to the literature, metabolites of other fungal genera, such as the fungus *Pestalotiopsis microspora*, producer of pestacin and isopestacin have already exhibited antioxidant activity. Another substance with great activity against free radicals is grafislactone A, a phenolic metabolite extracted from fungi of the genus *Cephalosporium*. There is also piperine, extracted from the metabolites of the fungus *Colletotrichum gloeosporioides* that presented potent antioxidant activity. Thus, we can suggest that this study presents promising results regarding the antioxidant potential of the fungus extracts stored in Amazonian Fungi Collection -CFAM.

Keywords: DPPH, fungi, biotechnological bioprospection, free radicals

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