

Proteomic Analysis of *Aspergillus* spp. Isolated From Amazon Soils

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Introduction: The Amazon has a variety of microorganisms, as the fungi of the genus *Aspergillus* spp., whose species differ specially by the morphology. These have a large applicability and potential biotechnological, especially for the medical area; providing a wide source to explore the biodiversity that can exist among the different species of this genus in the region. The shotgun proteomics is an approach which can help a better characterization of molecular processes that may be occurring in these isolated fungi. **Objective:** The study aims to investigate and characterize possible changes in the proteomic profiles of different species of *Aspergillus* spp. **Material and Methods:** Three species of *Aspergillus* (*Aspergillus flavus*, *Aspergillus oryzae* and *Aspergillus parasiticus*), isolated from Amazon soils and deposited in Leonidas and Maria Deane Institute (ILMD), were purified and cultivated in large scale. One control for experiment was also cultivated. To compare the proteomic profiles between the species and the control, the samples were submitted to one dimensional SDS gel electrophoresis and to the reverse chromatography online with tandem mass spectrometry (Orbitrap XL), performed independently. **Results and Discussion:** In our analysis, we verified that the *A. oryzae* and *A. parasiticus* presented the more similar proteomic profiles, with proteins of molecular weight around 15 to 30 kDa. Besides, *A. flavus* was the specie that showed the most specific differences between the secreted proteins. We also found common proteins among the different *Aspergillus* species and the control (only the culture medium – Czapek), which are mainly related to energetic and metabolic processes. **Conclusions:** The results indicate specific changes in the protein composition of species studied despite the little morphological differences in the same genus. Therefore, this work provides important information about the biodiversity to the molecular level of different species of *Aspergillus* isolated from Amazonian soils.

Keywords: *Aspergillus* spp., Amazon soils, shotgun proteomics.

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