



## ANTIMICROBIAL POTENCIAL OF ISOLATED FUNGI FROM AMAZONIAN DARK EARTH FROM CENTRAL AMAZON REGION

**Isabela V. da S. Amatto<sup>1\*</sup>, Patrícia L. N. de Carvalho<sup>1</sup>, Mateus de S. Terceti<sup>2</sup>,  
Daniela C. de M. Vieira<sup>1</sup>, Marília C. F. Ariosa<sup>1</sup>**

<sup>1</sup>Federal University of Alfenas, Alfenas, Brazil; <sup>2</sup>University of Santiago de Compostela, Santiago de Compostela, Spain; \*isabela.amatto@hotmail.com

**Abstract:** The Amazonian Dark Earth (ADE) from central Amazon region has great reservations of soils organic matter, which present large quantities of nutrients. This wealth of nutrients suggests a vast microbial diversity, including fungi, which act on soil and ecosystems maintenance, possibly contributing with the bioactive compounds production [1]. The present study evaluated the bioactive potential of fungal isolate from ADE. Antimicrobial activities of 15 fungal isolates investigated from ADE through the agar block screening [2], with each isolate challenged with three pathogens: *Staphylococcus aureus* (ATCC 6538), *Escherichia coli* (ATCC 25922) and *Candida albicans* (ATCC 10231). The isolated F12 stood out front to pathogens with halos measuring 20mm, 35mm and 25mm respectively, being submitted to the fermentation process in czapeck broth to obtain the ethyl acetate extract [2]. With the F12 extract, evaluated the minimum inhibitory concentration (MIC) and the minimum bactericide concentration (MBC) front the same pathogens. The values to MIC and MBC were in  $\mu\text{g.mL}^{-1}$ : *S. aureus* MIC: 200-400 and MBC: >400; *E. coli* MIC 50-25 and MBC: 50-100; *C. albicans* MIC/MBC: 200-400. It is possible to observe that this extract highlighted moderate antimicrobial activity, with featured to the action against *E. coli*. Preliminary results indicate that the F12 as well as the fermentation product could be promising sources of antimicrobial compounds, reinforcing the importance of prospection studies from ADE rich soils.

### References:

- [1] Lima, A.B., Cannavan, F.S., Navarrete, A.A., Teixeira, W.G., Kuramae, E.E., Tsai, S.M. 2015. Amazonian dark earth and plant species from the amazon region contribute to shape rhizosphere bacterial communities. *Microb Ecol.* 69 (4): 855-866.
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