

TITLE: ANTIOXIDANT ACTIVITY OF AN ENDOPHYTIC FUNGUS EXTRACT OBTAINED FROM AN AMAZON PLANT

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ABSTRACT:

Endophytic fungi are microorganisms that live in symbiotic interaction with their host plant. This allows the production of compounds with varied activities such as enzymes, hormones, antibiotics and antioxidants, of great interest to the industry. Thus, the objective of this work was to evaluate the antimicrobial and antioxidant activity of the crude extract obtained from an endophytic fungus of a plant species of the Amazon. Several fungi were isolated and purified, and fungus 101 was selected to obtain the crude extract. To obtain the mycelial extract, the fungus was placed in Sabouraud broth with yeast extract and incubated for 14 days, then the supernatant of the fermentation broth was collected and lyophilized. The evaluation of the antimicrobial activity of the fungal extract was performed through the microdilution technique to obtain minimum inhibitory concentration (MIC) and minimal bactericidal concentration (MBC), from the concentrations of 2,5, 2, 1,5 and 1mg /mL against strains of *Staphylococcus aureus* ATCC 6538, *Pseudomonas aeruginosa* ATCC 25853, *Escherichia coli* ATCC 8739 and *Candida albicans* ATCC 10231. The antioxidant activity was performed at the concentrations (5, 3, 2 and 1mg/mL) through trolox equivalent totality (TEAC), Trolox (6-hydroxy-2,5,7,8-tetramethylchromono-2-carboxylic acid), a potent antioxidant, by the colorimetric technique based on the reaction between ABTS and potassium persulfate. The results showed that fungal extract 101 did not present antimicrobial activity at the concentrations used in the tested strains. However, this extract showed strong antioxidant activity in all tested concentrations (5mg, 3mg, 2mg and 1mg/mL), being more evident in the concentration of 5mg/mL that was similar to the trolox 40mM antioxidant activity. Thus, fungus 101 extract showed a promising antioxidant capacity *in vitro*, which may be important in protecting or preventing the organism against oxidative damage in macromolecules such as lipids, proteins and nucleic acids. These damages can cause several pathologies, including cancer, neurodegenerative, cardiovascular, respiratory, among others.

Key words: endophytic fungi, antimicrobial activity, antioxidant activity.

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