

ANTIBACTERIAL ACTIVITY OF *Pisolithus microcarpus* EXTRACTS

Ana Carolina Peixoto Baidarian Mamede¹, Mariana Cristina Zucchi¹, Flávio Henrique Reginatto², Tatiana Guimarães², Inês Maria Costa Brighente³, Admir José Giachini¹

¹Laboratório de Diversidade Microbiana, Universidade Federal de Santa Catarina, ²Laboratório de Química de Produtos Naturais, Universidade Federal de Santa Catarina, ³Laboratório de Farmacognosia, Universidade Federal de Santa Catarina, Campus Universitário Trindade, Florianópolis (R. João Pio Duarte Silva, 241 - Córrego Grande - Florianópolis -SC)

¹e-mail: anacarol.pbm@hotmail.com

The kingdom Fungi encompasses beneficial and harmful organisms alike. This ecological niche depends on the interactions these organisms have with the surrounding community. Several species of fungi have been related to infectious diseases in humans, animals and plants, with considerable economic impacts. On the other hand, it is known that fungi play a key role in the environment and food chain, since they are responsible for the degradation of organic compounds, promoting nutrient cycling throughout the ecosystems. Currently, the great diversity of secondary metabolites produced by basidiomycetes, especially those cultivated *in vitro*, has opened a broad biotechnological field aiming at the production of antimicrobial compounds by these fungi. The aim of this study was to analyze the extracts of the fungi *Pisolithus microcarpus* (Cooke & Masee) G. Cunn. for their ability to reduce the growth of potentially pathogenic bacteria. The fungi were initially grown in modified Merlin Norkrans Medium (MNM) during 30 days. After significant growth, methanolic extraction of the mycelium was performed. The solvent was evaporated using a rotatory evaporator and the resulting extract partitioned using ethyl-acetate and butanol. The disk diffusion assay was performed using the methanolic extracts and fractions, against six bacterial isolates: *Staphylococcus aureus* (ATCC 25923 and ATCC 6538P), *Escherichia coli* (ATCC 25922 and ATCC 8739), *Pseudomonas aeruginosa* (ATCC 27853) and *Enterococcus faecalis* (ATCC 29212). Assay plates were incubated at 37° C during 24 h. The antibacterial activity was determined through the formation of inhibition zones around the discs. *Pisolithus microcarpus* have shown antibacterial activity by forming inhibition zones of about 18 mm in diameter for *S. aureus*, and 17 mm for *P. aeruginosa*. Thin-layer chromatography was performed with different solvents in order to separate compounds present in the active fractions. Additionally, analytical techniques were used to verify the presence of alkaloids, flavonoids and steroids on the samples. Preliminary results indicate the presence of flavonoids in the extracts, even though relative numbers are still low. The results show that new studies should be conducted for the identification of these compounds aiming at future biotechnological applications.

Keywords: fungi, antibiogram, phenols