

Title: Antimicrobial evaluation of *Ganoderma lucidum* extracts.

Authors: Bach, E. E.¹; Wadt, N. S. Y.¹; Zamboni, A.¹; Nascimento, Alicia M. T. ².

Institution: ¹Department of Healthy, UNINOVE, São Paulo, Brazil. R. Dr. Adolfo Pinto, 109, Barra Funda, CEP 01156-050, São Paulo, SP, Brazil; ² Student IC Chemistry, UNINOVE, São Paulo, Brazil. R. Dr. Adolfo Pinto, 109, Barra Funda, CEP 01156-050, São Paulo, SP, Brazil

Abstract

Ganoderma lucidum (Fr.) Krast, is a basidiomycete used as a healthy food (considered as nutraceutical product) and in medicine. In Brazil, produced mushrooms mature fruiting body which a modeled, sculptured, varnished appearance and occurs from red to brown colors. This mushroom is hard and it is necessary to obtain a extract. The purpose of this experiment was to determine if extract from *Ganoderma* is effective in controlling bacteria. For this, 30 gram of dry mushroom was percolated with 50mL alcohol 70% (GA1c) for one week and kept in bottles; another 30 gram was homogenizing in 100mL of water and kept at 60C or one hour and then filtered with paper filter (GWater). Finally GWater was mixture with 20% of GA1c and that was used in experiment because did not exhibit acute toxicology in mouse. The major element quantify was beta glucan at 345mg present. The antimicrobial activity was evaluated by the method of growing in depth (pour plate) casein soy agar against *Staphylococcus aureus* (ATCC 6538), nutrient agar for *Escherichia coli* (ATCC 25922) and Sabourad dextrose agar for *Candida albicans* (ATCC 10231). The microorganisms' inoculations were realized in culture medium inclined for the microbial growth activation and these cultures were washed with physiological solution and used at the microbial assay. Decimal dilutions were realized and were utilized 10⁻⁴ dilution for plating. A hundred µL of physiological solution, ethanol 70% and extract were added in petri dishes and inoculated 100µL of the microorganism solution, over the sets was added 15 mL of molded culture medium, specific for each microorganism on the dishes and waited for solidification. All samples were made in triplicate. After the culture sets solidify the dishes were inverted and incubated for 24-48 hours at 36 °C. The Colony Formative Unities (UFC) was counted and calculated the percentage (%) of microbial growth inhibition. Results demonstrated from 85 to 100% of inhibitory action with all bacteria used. Conclusion: Extract aqueous-alcohol from *G. lucidum* presented inhibitory action against bacterial.

Key words: beta-glucan, *Ganoderma*, antimicrobial.
This work was supported by CNPq (Grant #474681/2013).