

ANTIMICROBIAL AND ANTIOXIDATIVE POTENTIAL OF *GANODERMA LUCIDUM* CULTIVATION BROTH

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The aim of this study was to evaluate the antimicrobial and antioxidative potential of cultivation broth of *Ganoderma lucidum*. Mycelium was grown under conditions that were shown as optimal for the biomass and polysaccharides production in numerous *G. lucidum* strains (glucose/peptone/yeast extract medium; pH 5.5; stationary cultivation; dark; room temperature; 21 days). The mycelium was separated by Whatman No4 and filtrate was sterilized by milipore filter (0.2 µm). Antimicrobial activity of the filtrate was tested on five bacterial and five fungal species by microdilution method. Antioxidative capacity was determined spectrophotometrically by methanol solution of DPPH at 517 nm. The concentrations of phenol and flavonoid compounds in the broth were measured spectrophotometrically by Folin-Ciocalteu reagent at 760 nm and ethanol/aluminium nitrate/potassium acetate mixture at 415 nm, respectively. Tests were carried out by various broth dilutions, in triplicate.

All tested microorganisms were sensitive on concentrated broth and the minimum inhibitory dilution was four-fold for *Escherichia coli*, while growth of *Aspergillus niger* was inhibited only by concentrated broth. The other microorganisms were sensitive to two-fold dilution. Dilution increasing from 0 to 14-fold led to decrease of DPPH free radical-scavenging in the range from 39.67 % to 3.55 %. The amount of total phenol compounds, ranged from 128.685 µg ml⁻¹ (concentrated broth) to 1.625 µg ml⁻¹ (14-fold dilution). The total flavonoid content was less, ranged from 21.537 µg ml⁻¹ (concentrated broth) to 0.728 µg ml⁻¹ (six-fold dilution). Scavenging effect correlates directly with the different phenol content ($r^2 = 0.9876$).