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Antibacterial activity of two wild mushrooms, *Amanita echinocephala* and *Cerena unicolor*, collected in Macedonia

Daniela Nikolovska Nedelkoska¹, Natalija Atanasova-Pancevska², Mitko Karadelev², Dragan Damjanovski¹ and Dzoko Kungulovski²

¹St. Klement Ohridski University, Macedonia

²Ss. Cyril and Methodius University, Macedonia

Considering an increasing number of bacteria developing resistance to commercial antibiotics, the unexplored field of wild growing mushrooms hold great promise as potential new source of natural antimicrobial substances. In this study, antimicrobial potential of the methanolic extracts of two wild macro-fungi, *Amanita echinocephala* and *Cerena unicolor*, was evaluated. Testing was conducted against six microorganisms, including four strains of Gram-positive bacteria (*Bacillus subtilis*, *Bacillus pumilus*, *Sarcina lutea*, *Staphylococcus aureus*) and two strains of Gram-negative bacteria (*Pseudomonas aeruginosa*, *Escherichia coli*). The minimum bactericidal concentration (MBC), as the lowest concentration of the extract required to kill a particular bacterium, was determined using the microdilution method and subculturing to agar plates that not contain the test extract. Analyzed mushroom extracts exhibit antimicrobial activity. The extracts from lignicolous mushroom *C. unicolor* demonstrated more potent bactericidal effects. Gram-positive bacteria *B. subtilis*, *B. pumilus* and *S. aureus* were most sensitive to the examined *C. unicolor* extract (MBC = 1,563 mg/ml).

Biography

Daniela Nikolovska Nedelkoska has completed her PhD thesis related to the antioxidant properties, bioactive compounds and therapeutic potential of the wild-growing macrofungi (mushrooms) in 2014. Her competences ranges from food engineering and biotechnology, to biological area of expertise. She has participated in several national and international projects in her field of interest. Ass. Professor Daniela Nikolovska Nedelkoska has published over 25 original scientific articles and abstracts.

daniela.nedelkoska@uklo.edu.mk

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