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POSTER PRESENTATION

The antimicrobial activity of *Amanita muscaria*

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Abstract

Throughout the history of humanity, mushrooms have been utilized not only as a source of food but also for therapeutic purposes due to their medicinal properties. Many mushrooms found worldwide have served as the source of the earliest drugs used in the treatment of diseases, laying the foundations of modern medicine. Today, numerous medications are derived from compounds of fungal and plant origins, emphasizing the importance of investigating the potential medicinal benefits of plants and fungi. In this study, the antimicrobial effects of a mushroom species known as *Amanita muscaria*, commonly distinguished by its red cap with white spots, were examined. The disk diffusion test, a widely used technique to measure the inhibitory effect of a substance on different microorganism types, was employed to evaluate the antimicrobial potential of the mushroom. The ethanol extract of *Amanita muscaria* was tested in amounts of 30 µl, 60 µl, and 150 µl in the disk diffusion test conducted on 18 strains. The results demonstrated that the mushroom exhibited significant antimicrobial activity against certain Gram-positive bacteria, such as *Bacillus subtilis* and *Enterococcus faecium*. Notably, an inhibition zone of 8 mm was observed at all concentrations against *Bacillus subtilis*. A 10 mm inhibition zone was recorded against *Listeria monocytogenes* at the highest concentration. However, no inhibitory effect was observed against Gram-negative bacteria such as *Klebsiella pneumoniae*, *Escherichia coli*, and *Salmonella*. These results indicate that *Amanita muscaria* shows promise as a potential antimicrobial agent against specific Gram-positive bacteria, meriting further in-depth research in the future.

Keywords: *Amanita muscaria*, Mushroom, Disk diffusion test, Antimicrobial activity, Microorganism