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Collection and Identification of a Medicinal Mushroom, *Phellinus Conchatus* in Iran and Investigation of the Antibacterial Activity of Total Methanol Extract and Fractional Extracts

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Abstract

Introduction: Macromycetes are considered as new resources for medicine with various biological properties. One of the most important medicinal fungi in Iran is *Phellinus conchatus*. This genus contains 359 species around the world of which 12 species are reported from the north regions of Iran. *Phellinus* species have anticancer, antioxidant and antibacterial effects. Moreover, they have been used in traditional medicines for treatment of several diseases. Due to the increasing bacterial resistance to existing antibiotics, it seems that research for new sources of antibiotics is necessary.

Methods: The purpose of this research was to collect and identify the species with respect to hosts, dispersal, macromorphological and micromorphological characters of the species, and their biological effect against Gram-negative bacteria and Gram-positive bacteria evaluated using total methanol extract and its fractional extracts (chloroform, butanol and water extracts) using disk diffusion method, minimum inhibitory concentrations (MICs) and minimal bactericidal concentrations (MBCs).

Results: The results of disk diffusion tests showed that extracts except aqueous extract had growth inhibitory effects on three bacteria; *Staphylococcus aureus*, *Bacillus cereus* and *Pseudomonas aeruginosa*. The butanolic extract showed the best result in inhibition against the bacteria, especially on *Pseudomonas aeruginosa*. The MICs and MBCs of the butanolic extract of these bacteria were (1, 2mg.disk), (2, 4 mg.disk) and (8, 16mg.disk), respectively.

Conclusion: The results show that different extracts, especially butanol extract have high antibacterial activities which indicate the presence of active components in this fraction. More fractionation studies are under way to isolate the antibacterial components in the butanolic extract.

Keywords: Anti- Bacterial Agents; Antioxidants; Plants, Medicinal; Iran; Methanol

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