



**Screening of Wood-Decaying Fungi for
Antibacterial activity against Antibiotic
Resistant Bacteria**

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ABSTRACT

Over the last decade it has become clear that antimicrobial drugs are losing their effectiveness due to the evolution of pathogen resistance. Therefore, there is a critical need to search for new chemical compounds that can be successfully replaced as alternatives for the antibiotics in the present market. Natural products are the fundamental sources of new chemical components in the pharmaceutical industry as well as in ayurvedic medicine. The chemical compounds derived from natural products are less toxic and more effective than the artificial ones. Hence, the investigation of natural products that have antibiotic properties is a promising way of receiving less toxic and effective antibiotics for the consumers. Researchers are largely dealing with medicinal plants for the investigation of new drugs. But most of them are neglecting the other natural resources such as fungus that are having great medicinal values.

Hence, the aim of this review is to explore locally available fungus varieties which are having antibacterial properties against highly resistant bacteria. Eight species of wood rot macrofungi were randomly collected and identified as *Pleurotus pulmonarius*, *Pleurotus ostreatus*, *Tremets versicolour*, *Polyporus arcularius*, *Pluteus cervinus*, *Schizophyllum commune*, *Auricularia polytricha* by using their characteristics of fruiting bodies. One fungus variety was not identified up to generic level. Ethanolic extractions of all the fungus varieties were tested against *Escherichia coli*, *Pseudomonas auriginosa* and *Streptococcus aureus* by using the disk diffusion method. It was followed by evaluation of the minimum inhibitory concentration (MIC). Ethanolic extracts of *Pleurotus pulmonarius*, *Polyporus arcularius*, *Pleurotus ostreatus* and *Auricularia polytricha* showed inhibition against all three test microorganisms. *Tremets versicolour* was found to be only active against *Staphylococcus aureus* and *Pseudomonas auriginosa* while *Schizophyllum commune* only active against *Escherichia coli* and *Streptococcus aureus*. The poorest antimicrobial activity was recorded from the ethanolic extracts of *Polyporus arcularius* and *Pleurotus ostreatus*. Minimum MIC value was 8mg/ml for tested bacteria.

Key words: Antibacterial activity, Antibiotic resistance, Wood Rotting Fungi, Bacteria