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IN VITRO ANTIMICROBIAL ACTIVITY SCREENING OF *Pholiota aurivella* AND DETERMINATION OF THE ETHANOL EXTRACT COMPOSITION BY GAS CHROMATOGRAPHY/MASS SPECTROMETRYKerem Canli¹, Ilgaz Akata², Ali Yetgin³, Ergin Murat Altuner⁴¹Department of Biology, Faculty of Science, Dokuz Eylül University, Izmir, Turkey²Department of Biology, Faculty of Science, Ankara University, Ankara, Turkey email: akatailgaz@gmail.com³Department of Biotechnology, Institute of Engineering and Science, Izmir Institute of Technology, Izmir, Turkey⁴Department of Biology, Faculty of Science and Arts, Kastamonu University, Kastamonu, Turkey

Objective / Purpose: Although there is tremendous progress in human medicine; bacterial, viral and fungal issues are still threaten the public health especially in the developing countries. Relative unavailability of medicines in these countries and in addition to this the extensive antibiotic resistance has a large impact on human health. Therefore, further researches about investigation of new antimicrobial substances should be conducted. The purpose of this study was to determine the antimicrobial activity of *Pholiota aurivella* and investigating biochemical composition of the ethanol extract of this sample.

Material and Methods: A wide range of Gram positive and Gram negative bacteria and yeast were selected to test the antimicrobial effect of *L. leucothites*. Most of these strains are standard, some of the strains are food isolated and the rest are clinic isolated. 19 bacteria and 1 fungi species was used and these microorganism was sustained on Nutrient Agar. There are 11 standard bacteria and 1 standard fungi. Five of them are standard gram positive bacteria, which are *Bacillus subtilis* DSMZ 1971, *Enterococcus faecalis* ATCC 29212, *Listeria monocytogenes* ATCC 7644, *Staphylococcus aureus* ATCC 25923 and *Staphylococcus epidermidis* DSMZ 20044. The others are standard gram negative bacteria, which are *Enterobacter aerogenes* ATCC 13048, *Escherichia coli* ATCC 25922, *Pseudomonas aeruginosa* DSMZ 50071, *Pseudomonas fluorescens* P1, *Salmonella enteritidis* ATCC 13075 and *Salmonella typhimurium* SL1344. There is 1 standard fungi, which is *Candida albicans* DSMZ 1386. Besides, there are 8 non-standard bacteria. Three of them are gram positive bacteria, which are *Enterococcus durans*, *Enterococcus faecium*, *Staphylococcus aureus* (CI) and *Listeria innocua*. The others are gram negative bacteria, which are *Escherichia coli* (CI), *Klebsiella pneumoniae*, *Salmonella infantis* and *Salmonella kentucky*. 2.89, 5.77 and 11.55 mg samples were prepared by using ethanol extraction method. Besides, chemical composition of this sample was determined by Gas Chromatography-Mass Spectrometry and several libraries were used for GC/MS analysis.

Results: *P. aurivella* has several chemical component and antimicrobial potential against twelve studied species. These results are the first report for the antimicrobial potential of *P. aurivella*.

Conclusion / Discussion: Our study clearly presents that *P. aurivella* should have possible medicinal uses. However, further researches are needed in order to analyse the active substances and their activity mechanisms in details.

Keywords: *Pholiota aurivella*, mushroom, antimicrobial activity, bioactive composition, disk diffusion method, GC-MS.