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In vitro Antimicrobial activity screening and biochemical analysis of *Syntrichia calcicola*

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The tremendous increase in use of the anti-infective drugs is stated as the major factor in microbial evolution and antibiotic resistance. Thus, discovering new alternative antibiotics and antifungals are very important for the future of the public health. The antifungal and antibacterial potential of ethanol extract from the moss Syntrichia calcicola was analyzed against seventeen bacterial and one fungal species by disk diffusion method. S. calcicola collected from Akdağ, Amasya and its broad range antimicrobial potential was obtained. These microbial strains are Bacillus subtilis ATCC 6633, Candida albicans ATCC 10231, Enterobacter aerogenes ATCC13048, Enterococcus durans, Enterococcus faecalis ATCC 29212, Enterococcus faecium, Escherichia coli ATCC 25922, Escherichia coli CFAI, Klebsiella pneumoniae, Listeria monocytogenes ATCC 7644, Salmonella enteritidis

ATCC 13075, Salmonella infantis, Salmonella kentucky, Salmonella typhimurium SL 1344, Staphylococcus aureus ATCC 25923, Staphylococcus carnosus MC1.B, Staphylococcus epidermidis DSMZ 20044 and Streptococcus agalactiae DSMZ 6784. Twelve of them are standard species and they are important for exact determination of antimicrobial screening. Bioactive composition of this sample was also determined by Gas Chromatography-Mass Spectroscopy and

National Institute of Standards and Technology (NIST) library was used for mass spectra analysis. Our present study has shown that S. calcicola has antimicrobial activity against fifteen of the studied strains. These results are the first report for the antimicrobial potential of S.calcicola. Also several active metabolites were identified and substances causing antimicrobial activity were investigated.

Keywords: antimicrobial activity,bioactive composition,bryophyte,disk diffusion method,ethanol extract,Syntrichia calcicola