

competitive growth against 1-day and 6-day-old cells of *S. enterica* serotype Typhimurium and can be used to protect and remove contamination with antibiotic resistance pathogenic species of Enterobacteria. This is a manner by which human foodborne pathogen can be prevented and controlled.

AA10 EVALUATION OF *IN VITRO* ANTIBACTERIAL ACTIVITY OF EXTRACTS FROM LIVERWORT PLANTS OBTAINED IN BLACK SEA REGION OF TURKEY

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INTRODUCTION

The ongoing search for antimicrobial activity showing plants has gained special importance in recent years due to the increasing rate of infections caused by antibiotic-resistant bacteria. The liverworts (Marchantiophyta) are a diverse group of land plants that usually colonize moist habitats with extremely variable conditions and classified in the plant phylum Bryophyta. Traditionally, these plants were used as a natural medicine in some parts of the world because of their antimicrobial activity.

OBJECTIVES

In this study, we aimed to evaluate the *in vitro* antimicrobial activity of 7 liverwort species collected from different locations in Black Sea region of Turkey.

MATERIAL, METHODS

Methanol and N-hexane extracts were obtained from the following plants: *Porellaplathyphylla*, *Metzgeriafurcata*, *Plagiochilaasplenioides*, *Frullariatamarisci*, *Radula lindbergiana*, *Conocephalum conium* and *Marchantiapolymorpha* with Soxhlet extraction method.

Antimicrobial activity of the extracts were tested against *Staphylococcus aureus* (ATCC 29212), and *Escherichia coli* (ATCC 25922) by using broth microdilution method according to EUCAST. The tests were performed in triplicate for each microorganism.

RESULTS AND CONCLUSION

MICs and MBCs of liverwort plants' extracts for tested bacteria are shown in Table.

Table. Antimicrobial activity of the Liverwort plant extracts

Liverwort species	<i>Staphylococcus aureus</i> ATCC 29213				<i>Escherichia coli</i> ATCC 25922			
	Methanol extract		Hexane extract		Methanol extract		Hexane extract	
	MIC (mg mL)	MBC (mg mL)	MIC (mg mL)	MBC (mg mL)	MIC (mg mL)	MBC (mg mL)	MIC (mg mL)	MBC (mg mL)
<i>Porella platyphylla</i>	1,25	>2,5	1,25	≥ 2,5	0,625	≥ 0,625	0,625	≥ 0,625
<i>Metzgeria furcata</i>	1,25	>2,5	1,25	≥ 2,5	0,625	≥ 0,625	0,625	≥ 0,625
<i>Plagiochila asplenioides</i>	0,625	>2,5	1,25	≥ 2,5	0,625	≥ 2,5	0,625	≥ 0,625
<i>Frullaria tamarisci</i>	1,25	>2,5	1,25	≥ 2,5	0,312	≥ 0,625	0,625	≥ 2,5
<i>Radula lindbergiana</i>	1,25	>2,5	1,25	≥ 2,5	0,625	≥ 0,625	0,625	≥ 0,625
<i>Conocephalum conium</i>	1,25	>2,5	1,25	≥ 2,5	0,625	≥ 0,625	0,625	≥ 0,625
<i>Marchantia polymorpha</i>	0,625	>2,5	1,25	>2,5	0,625	≥ 0,625	0,625	≥ 0,625

MIC: Minimum inhibitory concentration; MBC: Minimum bactericidal concentration

Both methanol and hexane extracts from liverwort species have shown *in vitro* antibacterial activity against tested bacteria (Table). Hexane extracts were more active against to *E.coli* (MIC range 0.312-0.625 mg/mL) than methanol extracts and expressed promising MBCs for this microorganism. Further evaluation is needed to assess the antibacterial activity against other bacterial species and clinical isolates.

AA11 METHOD SUITABILITY TEST FOR DETERMINATION OF MICROBIOLOGICAL PURITY OF ACIKLOVIR CREAM 5%

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Introduction: Aciklovir cream 5% is an antiviral cream for topical use. For pharmaceutical topical forms, the parameters that should be quality controlled from microbiological aspect are Total Aerobic Microbial Count (TAMC), Total Combined Yeasts/Molds Count (TYMC) and test for *Staphylococcus aureus* and *Pseudomonas aeruginosa*.

Objective: The aim of this project is to validate the analytical method which will be used in the routine work for determination of the microbiological purity of Aciklovir cream 5%.

Materials: Standard equipment and accessories that are used microbiological laboratory. The test microorganisms for this validation as well as the media used are recommended for the method suitability test.

Method: For determination of the antimicrobial activity and validation