



²⁰²²
Belgrade

FEMS Conference on Microbiology

in association with
Serbian Society of Microbiology

30 June - 2 July

2022 • Serbia

**ELECTRONIC
ABSTRACT BOOK**

We thank the pharmaceutical, lab and biomedical industry partners from Serbia, the South East Europe region and worldwide for their recognition of the importance of the event, their participation and their support.

We hope that you enjoyed the content and all the other aspects of the Conference. If you missed anything, you can catch up by watching the recordings, presentations or have a detailed look at the posters.

We warmly wish you health, love and happiness and are looking forward to the new encounters, coming up next: FEMS 2023 Congress in Hamburg, FEMS 2024 Conference in Tallinn and numerous events of the SSM in Serbia and South East Europe region.

Sincerely



Hilary Lappin-Scott

.....

Prof. Hilary Lappin-Scott
Scientific Committee Chairperson,
FEMS President



Vaso Taleski

.....

Prof. Vaso Taleski
Organizing Committee Chairperson,
FEMS Director of Events and Internationalization



Dragojlo Obradović

.....

Prof. Dragojlo Obradović
Scientific Committee Co-Chairperson,
President of Serbian Society of Microbiology



Lazar Ranin

.....

Prof. Lazar Ranin
Organizing Committee Co-Chairperson,
Vice-President of Serbian Society of Microbiology

Scientific Committee

Hilary Lappin-Scott / *United Kingdom*
Scientific Committee Chairperson, FEMS President

Dragojlo Obradovic / *Serbia*
Scientific Committee Co-Chairperson, President of Serbian Society of Microbiology

Roberto Antolovic / *Croatia*

Dejan Baskić / *Serbia*

Jelena Begović / *Serbia*

Helena Bujdáková / *Slovakia*

Carianne Buurmeijer / *The Netherlands*

Ivana Dakic / *Serbia*

Ivica Dimkić / *Serbia*

Ana Kaftandjieva / *North Macedonia*

Aleksandra Knezevic / *Serbia*

Branislava Kocić / *Serbia*

Konstantinos Kormas / *Greece*

Özgür Kurt / *Turkey*

Daniela Marchetti / *Italy*

Sinisa Markov / *Serbia*

Gordana Mijovic / *Montenegro*

Alexandra-Maria Nășcuțiu / *Romania*

Jakov Nišavić / *Serbia*

Dragoslava Radin / *Serbia*

Galina Satchanska / *Bulgaria*

Marjanca Starčić Erjavec / *Slovenia*

Carsten Suhr Jacobsen / *Denmark*

Nijaz Tihić / *Bosnia & Herzegovina*

Stefan Tyski / *Poland*

Antonio Ventosa / *Spain*

James Williamson / *United Kingdom*

Ken-ichi Yoshida / *Japan*

Lixin Zhang / *China*



2022
Belgrade

FEMS Conference on Microbiology

in association with
Serbian Society of Microbiology

30 June - 2 July

2022 • Serbia

**ELECTRONIC
ABSTRACT BOOK**

**347 / DO ETHANOLIC EXTRACTS OF LAMIACEAE SPECIES
USED IN FOLK MEDICINE HAVE ANTIBIOFILM
ACTIVITY ON PSEUDOMONAS AERUGINOSA PAO1?****08****Keywords:** *antibiofilm activity, Lamiaceae, Pseudomonas aeruginosa, ethanolic extracts***Jelena Đorđević** / University Of Belgrade, Institute For Multidisciplinary Research, *Serbia***Jelena Đorđević** / University of Belgrade, Institute for Multidisciplinary Research, Belgrade, *Serbia***Mariana Oalđe Pavlović** / University of Belgrade, Faculty of Biology, Institute of Botany and Botanical Garden "Jevremovac", Belgrade, *Serbia***Jovana Jovanović Marić** / University of Belgrade, Institute for Biological Research "Siniša Stanković", National Institute of the Republic of Serbia, Belgrade, *Serbia***Stoimir Kolarević** / University of Belgrade, Institute for Biological Research "Siniša Stanković", National Institute of the Republic of Serbia, Belgrade, *Serbia***Sonja Duletić-Laušević** / University of Belgrade, Faculty of Biology, Institute of Botany and Botanical Garden "Jevremovac", Belgrade, *Serbia***Branka Vuković-Gačić** / University of Belgrade, Faculty of Biology, Institute of Botany and Botanical Garden "Jevremovac", Chair of Microbiology, Belgrade, *Serbia***BACKGROUND**

According to World Health Organization, 70-95% of the population chooses folk medicine as their primary approach for health maintenance. In addition to their healing properties and application in folk medicine, Lamiaceae plants are often valued in cookery as spices and food preservatives.

OBJECTIVES

Hence, the aim of this study was to examine the antibiofilm activity of 12 ethanolic extracts of Lamiaceae species on biofilm formation and the degradation of existing biofilm of *Pseudomonas aeruginosa* PAO1 (ATCC 15692).

METHODS

The crystal violet staining method was used to evaluate the newly formed bacterial biofilms. Four concentrations (double dilutions) of plant extracts (starting conc. 2500 µg/mL), solvent control (ethanol, starting conc. 15%), and positive control (streptomycin, starting conc. 12.5 µg/mL) were tested.

RESULTS

All ethanol extracts showed antibiofilm activity. However, the strongest activity was observed for *Hyssopus officinalis*, *Melissa officinalis*, *Mentha piperita*, and *Ocimum basilicum*, where the viability of bacteria in the biofilm after treatment was about 60% mainly at each tested concentration. *Teucrium chamaedrys* extract exhibited the strongest activity by degrading about 60% of biofilm (about 40% viability) at all concentrations except at the lowest tested one. Promising results were also observed for *M. piperita* (at each of the tested concentrations) and *O. basilicum* (at the highest tested concentration), where the viability of bacteria in the biofilm after treatment was reduced by about 40%. The remaining extracts showed a slightly lower effect on the degradation of the previously formed biofilm of *P. aeruginosa* PAO1.

ACKNOWLEDGEMENTS/REFERENCES

This work was funded by the Ministry of Education and Science of the Republic of Serbia, contract numbers 451-03-68/2020-14/200053, 451-03-9/2021-14/ 200178 and 451-03-9/2021-14/200007.