



2022
Belgrade

FEMS Conference on Microbiology

in association with
Serbian Society of Microbiology

30 June - 2 July

2022 • Serbia

**ELECTRONIC
ABSTRACT BOOK**

Message from the organizers

Dear colleagues and friends,

The 1st FEMS Belgrade Conference on Microbiology in collaboration with Serbian Society for Microbiology was held from 30 June to 2 July 2022.

A large number of high-quality scientific contributions was presented at the Conference. We are delighted to have been able to put them together and send you the FEMS Conference Abstract Book. With thanks to your contributions, we can now proudly present an abstract book that both reflects the scientific abundance of the conference and serves as a memento of an event worth remembering. We thank all participants and in particular the presenters of these abstracts for making this happen!

This conference was a pioneering endeavour, one of the largest and most important microbiology events in East Europe in 2022. As in 2020, when we had to pursue the first conference online due to the COVID-19 pandemic, this conference faced challenging times but could luckily be held both onsite and online.

Again, in 2022, we were faced with the great challenges as it was the case back in 2020, and yet again, a brave decision to move ahead has been made and it paid off.

You showed large interest to become part of the Conference and our joint history. Almost 1.000 scientific contributions were submitted, and more than 870 were approved. This showcases not only the large interest to be part of the conference, but also it is the reason this event was such a success.

We are thankful and proud to have welcomed almost 600 microbiologists from 40 European countries and another 20 countries worldwide, almost 200 more participants online. With ten core scientific sessions, including one session with the best grant alumni presentations, three plenary lecture and a COVID-19 round table, six industry lectures and a satellite symposium, the total of invited lectures amounted to 60. In addition, six thematic sessions with over 120 short oral/e-poster presentations of selected participants-authors in the main program Finally, over 400 e-posters/presentations on demand, in total over 600 presentational items, uploaded on the Conference ONLINE platform and accessible to participants until the 31 December 2022.

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

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



Vaso Taleski

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



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**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 Oalde 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.

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