



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,
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Vaso Taleski

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346 / ETHANOLIC EXTRACTS OF LAMIACEAE SPECIES INHIBIT THE BACTERIAL INFECTION OF HUMAN LUNG FIBROBLASTS AND STIMULATE CELL MIGRATION

Keywords: *Lamiaceae, Extracts, Antibacterial activity, Wound healing*

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BACKGROUND

The increasing bacterial resistance to antibiotics poses a serious global threat. For that reason, the research into plant-derived antibacterial agents has become progressively more interesting, particularly in regard to their capacity to prevent the delay or inability of wound closure and healing.

OBJECTIVES

The aim of this study was to evaluate i) the antibacterial potential of ethanolic extracts (70% ethanol) of 18 Lamiaceae species against four Gram-negative and three Gram-positive bacterial strains; ii) the effect of these extracts on *Pseudomonas aeruginosa* PAO1 infection of human lung fibroblasts (MRC-5), and iii) the effect on MRC-5 cell migration.

METHODS

The antibacterial activity was tested by minimal inhibitory concentration (MIC) assay. The effect on bacterial infection of MRC-5 cells was determined using the invasion assay, while the cell migration was assessed with Scratch assay.

RESULTS

The tested Gram-positive bacteria, especially *Bacillus subtilis*, are more sensitive to the effects of ethanolic extracts than the Gram-negative bacteria. Moreover, the tested extracts significantly inhibited the invasion of *Pseudomonas aeruginosa* PAO1 during MRC-5 infection, and most of them also displayed promising stimulating potential on MRC-5 migration in a disrupted cell monolayer. Finally, the results of IBR (integrated biomarker response) analysis highlighted *Salvia officinalis* ethanolic extract as the most active one, which is in accordance with the existing data suggesting that this plant represents an effective antibacterial and wound-healing agent commonly used in traditional medicine. Altogether, these results are expected to foster further studies that will focus on combating bacterial resistance to antibiotics using natural products.

ACKNOWLEDGEMENTS/REFERENCES

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