



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

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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*

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Branislava Kocić / *Serbia*

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Lixin Zhang / *China*



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**636 / MONITORING NON-WILD TYPE ANTIBIOTIC
RESISTANT ENTEROBACTERIACEAE IN THE RIVER
DANUBE: A SIX-YEAR-COMPARISON**

02

Keywords: *Enterobacteriaceae, Danube, Antimicrobial Resistance, nan*

Michael Koller / *nan, Austria*

Julia Nürnberger / Institute of Hygiene, Microbiology and Environmental Medicine, Medical University Graz, Graz, *Austria*

Kerstin Hack / Institute of Hygiene, Microbiology and Environmental Medicine, Medical University Graz, Graz, *Austria*

Irina Dielacher / Institute of Hygiene, Microbiology and Environmental Medicine, Medical University Graz, Graz, *Austria*

Julian Wachter / Institute of Hygiene, Microbiology and Environmental Medicine, Medical University Graz, Graz, *Austria*

Benjamin Hoffer / Institute of Hygiene, Microbiology and Environmental Medicine, Medical University Graz, Graz, *Austria*

Sophie Kohlmaier / Institute of Hygiene, Microbiology and Environmental Medicine, Medical University Graz, Graz, *Austria*

Christin Hagedorfer / Institute of Hygiene, Microbiology and Environmental Medicine, Medical University Graz, Graz, *Austria*

Medina Kapic / Institute of Hygiene, Microbiology and Environmental Medicine, Medical University Graz, Graz, *Austria*

Julia Gütl / Institute of Hygiene, Microbiology and Environmental Medicine, Medical University Graz, Graz, *Austria*

Polina Arsenijevic / Institute of Hygiene, Microbiology and Environmental Medicine, Medical University Graz, Graz, *Austria*

Iris Schachner / Institute for Hygiene and Applied Immunology – Water Microbiology, Medical University Vienna, Vienna, Austria; Interuniversity Cooperation Centre Water & Health, www.waterandhealth.at, *Austria*

Stefan Jakwerth / Institute for Hygiene and Applied Immunology – Water Microbiology, Medical University Vienna, Vienna, Austria; Interuniversity Cooperation Centre Water & Health, www.waterandhealth.at, *Austria*

Stoimir Kolarević / Institute for Biological Research “Siniša Stanković”, National Institute of Republic of Serbia, Department for Hydroecology and Water protection, University of Belgrade, *Serbia*

Margareta Kračun-Kolarević / Institute for Biological Research "Siniša Stanković", National Institute of Republic of Serbia, Department for Hydroecology and Water protection, University of Belgrade, **Serbia**

Erika Tóth / Department of Microbiology, Eötvös Loránd University, Budapest, **Hungary**

Domenico Savio / Division Water Quality and Health, Karl Landsteiner University of Health Sciences, Krems, Austria; Institute for Chemical, Environmental and Bioscience Engineering, Vienna University of Technology, Austria; Interuniversity Cooperation Centre Water & Health, www.waterandhealth.at, **Austria**

Andreas H. Farnleitner / Division Water Quality and Health, Karl Landsteiner University of Health Sciences, Krems, Austria; Institute for Chemical, Environmental and Bioscience Engineering, Vienna University of Technology, Austria; Interuniversity Cooperation Centre Water & Health, www.waterandhealth.at, **Austria**

Clemens Kittinger /

Institute of Hygiene, Microbiology and Environmental Medicine, Medical University Graz, Graz, **Austria**

Alexander K.T. Kirschner / Institute for Hygiene and Applied Immunology – Water Microbiology, Medical University Vienna, Vienna, Austria; Division Water Quality and Health, Karl Landsteiner University of Health Sciences, Krems, Austria; Interuniversity Cooperation Centre Water & Health, www.waterandhealth.at, **Austria**

Gernot Zarfel / Institute of Hygiene, Microbiology and Environmental Medicine, Medical University Graz, Graz, **Austria**

Human induced antibiotic resistant bacteria (ARB) are not only found in clinical surroundings: large rivers are of great concern as regards their spreading. This ongoing study's aim is to analyse the major propagation pathways and sources of ARB in the Danube, and to compare the results with data obtained in 2013. *Escherichia coli* and *Klebsiella* spp. isolated during the 4th Joint Danube Survey were tested for their antibiotic susceptibility. 23.2% of 1635 *E. coli* were resistant and 11.7% were multiresistant. There was a significant increase in resistances to augmentin, moxifloxacin and piperacillin/tazobactam and a significant decrease regarding tetracycline. 23 expressed an extended-spectrum-beta-lactamase phenotype. 15.87% of 630 *Klebsiella* spp. were resistant and 0.95% were multiresistant. Resistances to moxifloxacin and augmentin were the most common resistances detected.

Two isolates showed an ESBL-phenotype, and two isolates were resistant to the last line antibiotic tigecycline. In comparison the data of 2013 and 2019 show a similar proportion for multiresistant *E. coli*, but regarding resistances to some single antibiotics significant changes were determined. In contrast, the *Klebsiella* isolates showed a very similar distribution of resistances. Despite, 30% of non-wild type resistant *E. coli* in the environment is a very high number when compared to clinical settings with approximately 50%. However, the relevance of these findings concerning human health and the environment is yet unclear as there is only a very limited number of studies for comparison and studies on the significance of pathways from the river back to humans are largely missing.