UMS 24° SERIES

04th - 06th April 2024

MONA PLAZA Hotel, Belgrade

XIII CONGRESS OF MICROBIOLOGISTS OF SERBIA MIKROMED REGIO 5

FROM BIOTECHNOLOGY TO HUMAN AND PLANETARY HEALTH



CONGRESS PROGRAMME

ORGANIZER:

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4th - 6th April 2024



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FROM BIOTECHNOLOGY TO HUMAN AND PLANETARY HEALTH

XIII CONGRESS OF MICROBIOLOGISTS OF SERBIA with international participation MIKROMED REGIO 5, UMS Series 24:

4th – 6th April 2024, MONA PLAZA Hotel, Belgrade, Serbia













UMS 24 PROGRAMME

Thursday, April 4, 2024

Ō 08:00-09:00 Registration of participants

Venue - Hall "DONJI DORĆOL" of the MONA PLAZA Hotel, Cara Uroša 62-64, First floor

ORGANIZATIONAL OPENING REMARKS - Ivica Dimkić, Dušan Kekić & Lazar Ranin

🐧 **08:45-09:30 Jelena Begović** - Ministry of Science, Technological Development and Innovation

Ljubiša Stanisavljević - Dean of the Faculty of Biology of the University of Belgrade **Luciano Catani** - Science Attaché at the Italian Embassy in Belgrade, Serbia **Vaso Taleski** - FEMS Director of Events & Internationalization FEMS - 50 years of successful connecting people and sharing knowledge in microbiology worldwide

SESSION IA-1

MICROBIAL GENETICS, METAGENOMICS AND METAPROTEOMICS (PART 1) – MICROBIOMES AND RECENT DEVELOPMENTS & PROBIOTICS

Chaired by: Maja Rupnik & Nataša Golić

O9:30-09:55 Maja Rupnik (Slovenia): The role of gut microbiota on infection with multiresistant

bacteria

🐧 **09:55-10:20** Nataša Golić (Serbia): The use of integrative multi-omics approach in cultivation and

characterization of gut bacteria related to microbiota-gut-brain axis as a source for

Next Generation Probiotics

To:20-10:45 Vladimir Milivojević (Serbia): The importance of probiotics and modulation of

microbiota in gastroenterology

🐧 10:45-11:10 Mirjana Rajilić-Stojanović (Serbia): Modulation of human mycobiota as a tool for

promoting health

Marina Atanasković-Marković (Serbia): Dangerous relations: bacteria, antimicrobial

therapies, and allergic diseases

🐧 11:35-11:50 Hristina Mitrović (Serbia, Offer. pres.): From gut to lab: unlocking anti-inflammatory

potential with GABA-producing bacteria

🐧 11:50-12:10 AbelaPharm (INDUSTRY LECTURE) - Nada Tršić-Milanović (Serbia): From

microscope to shelf: How our research becomes strength

Venue - Hall "SCHONDA 4" of the MONA PLAZA Hotel, Cara Uroša 62-64, First floor

SESSION IB-1

INDUSTRIAL AND FOOD MICROBIAL BIOTECHNOLOGY (PART 1) - MICROBIAL VALORIZATION OF WASTES AND SECONDARY MATERIALS & BIOTECHNOLOGY AND SYNTHETIC MICROBIOLOGY Chaired by: Vera Karličić & Alexander Osmolovskiy

© 09:30-09:55 Alexander Osmolovskiy (Russian Federation): Proteinases of filamentous fungi as

activators of hemostatic system proteins: key properties and application



Ō 09:55-10:20	Nemanja Mirković (Serbia): Bacteriocins: past, current knowledge and future
.	prospects
Ō 10:20-10:45	Marina Jovanović (Serbia): Valorization of psychobiotics and agri-food by products as functional ingredients
Ō 10:45-11:10	Vera Karličić (Serbia): Ecological services of beneficial microorganisms as a paradigm of sustainable agroecosystems
Ō 11:10-11:25	Vincent Léguillier (France, Offer. pres.): Structural optimization of an I-motif aptamer for the specific detection of <i>Staphylococcus aureus</i>
Ō 11:25-11:40	Marija Duvnjak (Croatia, Offer. pres.): Aerobic stability of the alfalfa silage

12:10-12:30 COFFEE BREAK

12:20-12:30 GROUP PHOTO IN FRONT OF THE MONA PLAZA HOTEL



SESSION IIA-1

ACTIVE IMMUNIZATION AS THE KEY ELEMENT IN INFECTION PREVENTION AND CONTROL (PART 1) - VIRAL VACCINES

Chaired by: Maja Stanojević & Aleksandra Knežević

Ō 12:30-12:55 Ō 12:55-13:20	Maja Čupić (Serbia): Vaccines for influenza and Covid 19 - what we need to know Aleksandra Knežević (Serbia): HPV vaccines in the cancer prevention
	– recommendations and future prospective
Ō 13:20-13:45	Maja Stanojević (Serbia): Poliovirus eradication: challenges of containment
(5) 13:45-14:10	Ivana Lazarević (Serbia): Advances, challenges and novelties in HBV and HCV
	vaccines development
Ō 14:10-14:35	Ana Banko (Serbia): Development of new viral vaccines with a focus on the new RSV vaccine

• Venue - Hall "SCHONDA 4" of the MONA PLAZA Hotel, Cara Uroša 62-64, First floor

SESSION IIB-1

ENVIRONMENTAL MICROBIOLOGY AND BIOTECHNOLOGY (PART 1) - HOST-MICROBE INTERACTIONS & TOWARDS A MORE SUSTAINABLE AGRICULTURE AND SOIL MICROBIAL LEGACY Chaired by: Ines Mandić Mulec & Ivica Dimkić

Ō	12:30-12:55	Ines Mandić Mulec (Slovenia): Social strategies by beneficial bacterium Bacillus subtilis
Ō	12:55-13:20	Vittorio Venturi (Italy): Inter-species bacterial signaling in the plant microbiome
Ō	13:20-13:45	Stéphane Compant (Austria): Harnessing fungal-bacterial interactions to improve plant growth and health
Ō	13:45-14:10	Ioannis Kampouris (Germany): A consortium of plant-beneficial microorganisms mitigates drought effects on maize by aiding the recruitment of focal soil microorganisms in rhizosphere
Ō	14:10-14:25	Dmitrii Deev (Slovenia, Offer. pres.): Enhancing bioremediation efficiency: novel isolation techniques for microbial consortia in recalcitrant PAH-contaminated soils
Ō	14:25-14:40	Ivana Galić (Serbia, Offer. pres.): Soil microbiome diversity in maize-winter wheat crop rotation













- **14:40-15:30** LUNCH BREAK
- Venue Hall "DONJI DORĆOL" of the MONA PLAZA Hotel, Cara Uroša 62-64, First floor

15:30-15:50 EuroMedicina (INDUSTRY LECTURE) - Aleksa Jovanović (Serbia): EXS2600 MALDI TOF - new possibilities

SESSION IIIA-1

ENVIRONMENTAL MICROBIOLOGY AND BIOTECHNOLOGY (PART 2) - TOWARDS A MORE SUSTAINABLE AGRICULTURE AND SOIL MICROBIAL LEGACY & PHYTOPATHOLOGY Chaired by: Jovana Grahovac & Aleš Lapanje

function in microbial communities

Ō 15:50-16:15	Aleš Lapanje (Slovenia): Harnessing spatial microbiome dynamics for cutting-edge
	environmental biotechnology
(5) 16:15-16:40	Dorđe Bajić (The Netherlands): Using fitness landscapes to engineer optimal

(5) **16:40-17:05 Matjaž Hladnik (Slovenia):** Comparative analysis of phyllosphere microbiota in olive leaf spot disease

(Serbia): Microbial biomass production and application within

biorefinery concept

Marko Vincenković (Croatia, Offer. pres.): Preparation, characterization and

Tr:30-17:45 Marko Vincenković (Croatia, Offer. pres.): Preparation, characterization and application of copper microparticles in controlling of phytopathogenic fungi



SESSION IIIB-1

PANEL SESSION - INFECTIONS IN PATIENTS ON IMMUNOMODULATION AND IMUNOSUPRESIVE THERAPIES

Moderator: Dušan Kekić

> Gordana Petrović (Serbia) Tamara Knežević (Serbia) Borko Gobeljić (Serbia) Aleksandra Plavšić (Serbia) Ana Banko (Serbia)

Alia Daliko (Selbia)

PRESENTING CASES:

Tijana Đerić (Serbia): Occurrence of pneumonia in a patient on biological therapy due to TRAPS

Olga Odanović (Serbia): Infections in patients with inflammatory Bowel disease on biologic therapy: Challenges in management

Ljubica Matić (Serbia): Biological therapy and infections in hematopoietic stem cell transplantation

Uroš Karić (Serbia): A series of rare infectious complications in an immunosuppressed patient with SLE

♦ 17:45-18:10 COFFEE BREAK















SESSION IVA-1

INDUSTRIAL AND FOOD MICROBIAL BIOTECHNOLOGY (PART 2) - FOOD MICROBIOLOGY Chaired by: Mirna Mrkonjić Fuka & Konstantinos Papadimitriou

(1)	18:10-18:35	Tamar Sachaneli (Georgia): Microbial diversity of Georgian artisanal cheese production
Ō	18:35-19:00	Konstantinos Papadimitriou (Greece): Multi-omics approaches to characterize the
		microbiome of certain greek artisanal fermented foods and wines
Ō	19:00-19:25	Mirna Mrkonjić Fuka (Croatia): Fermented food ecosystems - a treasure chest of
		untapped microbial potential
Ō	19:25-19:40	Marija Todorovska Ivkovikj (North Macedonia, Offer. pres.): Isolation and
		characterization of yeasts from Macedonian wineyards for production of Macedonian
		unique wine

Venue - Hall "SCHONDA 4" of the MONA PLAZA Hotel, Cara Uroša 62-64, First floor

SESSION IVB-1

ACTIVE IMMUNIZATION AS THE KEY ELEMENT IN INFECTION PREVENTION AND CONTROL (PART 2) - VIRAL VACCINES

Chaired by: Danijela Miljanović & Ivana Lukić

Ō	18:10-18:35	Danijela Miljanović (Serbia): MMR vaccine and seroprevalence of measles, mumps
		and rubella IgG antibodies among young medical students in Serbia
Ō	18:35-19:00	Ivana Lukić (Serbia): mRNA vaccine manufacturing – challenges in plasmid DNA
		cloning vector design
Ō	19:00-19:15	Marko Janković (Serbia, Offer. pres.): Human cytomegalovirus oncoprotection
		across diverse populations, tumour histologies, and age groups: the relevance for
		prospective vaccinal therapy

○ 08:00-09:00 Registration of participants

Venue - Hall "DONJI DORĆOL" of the MONA PLAZA Hotel, Cara Uroša 62-64, First floor

SESSION IA-2

MULTI DRUG AND PAN DRUG RESISTANCE & HEALTH MICROBIOLOGY AND BIOTECHNOLOGY (PART 1)
Chaired by: Ina Gajić & Paul Cos

Ō	09:00-09:25	Paul Cos (Belgium): Challenges and lessons learned from antimicrobial research
Ō	09:25-09:50	projects Ina Gajić (Serbia): Genomic epidemiology of carbapenem-resistant <i>Pseudomonas</i> aeruginosa



Ō 09:50-10:15	Katarina Novović (Serbia): <i>Acinetobacter baumannii</i> resistant to last line antibiotics: an emerging threat in Western Balkan
Ō 10:15-10:40	Dušan Milivojević (Serbia): From soil to lab: Exploring toxicology with <i>Caenorhabditis</i> elegans
Ō 10:40-10:55	Miloš Jovićević (Serbia, Offer. pres.): High-level resistance of carbapenem-resistant <i>Klebsiella pneumoniae</i> to novel β -lactam- β -lactamase inhibitor combinations in clinical settings in Serbia
Ō 10:55-11:20	Jose Alexander (USA) - online: Understanding antimicrobial resistance for testing and treatment strategies
Ō 11:20-11:40	bioMérieux (INDUSTRY LECTURE) - Snežana Jovanović (Serbia): Syndromic PCR or how to solve diagnostic Rubik's cube easily



SESSION IB-2

DOM

MICROBIAL GENETICS, METAGENOMICS AND METAPROTEOMICS (PART 2) - MICROBIOMES AND RECENT DEVELOPMENTS & MICROBIAL GENOMES AND THEIR EVOLUTION Chaired by: Livia Leoni & Gergely Maróti

Ō	09:00-09:25 09:25-09:50	Livia Leoni (Italy): Role of stringent response in <i>Pseudomonas aeruginosa</i> virulence Gergely Maróti (Hungary): Genome level investigation of inter-kingdom microbial interactions
ā	09:50-10:15	Elena Perrin (Italy): Insights into the evolution of multipartite genomes in
Ü	02.50 10.15	Proteobacteria
Ō	10:15-10:40	Svetlana Ugarčina Perović (Italy) - <i>online</i> : Challenges in metagenomic annotation of antibiotic resistome
Ō	10:40-10:55	Marko Panić (Serbia, Offer. pres.): Exploring <i>E. coli</i> -based expression of genetically inactivated tetanus toxin for vaccine development
Ō	10:55-11:10	Allwin Mabes Raj (Slovenia, Offer. pres.): Mer B (organomercurial-lyase) mediated quartz crystal microbalance (QCM) based methylmercury detection

(5) 11:40-11:55 COFFEE BREAK



SESSION IIA-2

ACTIVE IMMUNIZATION AS THE KEY ELEMENT IN INFECTION PREVENTION AND CONTROL (PART 3) - BACTERIAL VACCINES

Chaired by: Tamara Kastrin & Nataša Opavski

Ō 11:55-12:20	Tamara Kastrin (Slovenia): The importance of vaccination and national surveillance of invasive bacterial diseases and whooping cough in Slovenia
Ō 12:20-12:45	Nataša Opavski (Serbia): Do we need higher valency pneumococcal conjugate
	vaccines in Serbia? Marko Veljković (Serbia): Vaccination against pertussis in Serbia: past, current
© 12. 4 5-15.10	challanges and future perspectives
⑤ 13:10-13:35	Nevena Jovičić (Serbia): Complications of pneumococcal pneumonia in children
	Aleksandar Sovtić (Serbia): Respiratory infections in children – over the horizon



SESSION IIB-2

ENVIRONMENTAL MICROBIOLOGY AND BIOTECHNOLOGY (PART 3) - BIODETERIORATION OF MATERIALS: EXTREME ENVIRONMENTS & ANTIMICROBIAL RESISTANCE: A ONE HEALTH CHALLENGE Chaired by: Cecilia Flocco & Nikola Unković

Ō 11:55-12:20	Cecilia Flocco (Germany): New perspectives for microbiology and biotechnology in cultural heritage research
Ō 12:20-12:45	Nikola Unković (Serbia): Research into the application of bacterial-based
	bioformulations in the conservation of fungal-deteriorated works of art in Serbia
Ō 12:45-13:10	Nikolina Udiković Kolić (Croatia): Environmental spread of antibiotic resistance – the
	role of industrial, agricultural and municipal waste
Ō 13:10-13:35	Stoimir Kolarević (Serbia): Impact of untreated wastewaters on the microbiological
	water quality of the Danube river and its tributaries in Serbia
Ō 13:35-14:00	Dragana Predojević (Serbia): Phytoplankon in small water bodies

14:00-15:00 LUNCH BREAK

Venue - Hall "DONJI DORĆOL" of the MONA PLAZA Hotel, Cara Uroša 62-64, First floor

(INDUSTRY LECTURE) - Ivana Ćirković (Serbia): Together in the fight against AMR, from immunization and diagnostics to targeted therapy

SESSION IIIA-2

ALTERNATIVE APPROACHES IN ANTIMICROBIAL CONTROL (PART 1) - BACTERIOPHAGES APPLICATIONS Chaired by: Mariagrazia Di Luca & Goran Vukotić

Ō 15:20-15:45	Mariagrazia Di Luca (Italy): Unveiling the Janus-Face of Bacteriophages: A dual
	perspective on antibacterial therapy
Ō 15:45-16:10	Hugo A. M. de Oliveira (Portugal): Novel bacteriophage-based depolymerase
	strategies to control <i>A. baumannii</i>
Ō 16:10-16:35	Goran Vukotić (Serbia): Bacteriophages of multidrug-resistant nosocomial
	pathogens – Belgrade experience
Ō 16:35-17:00	Luís D. R. de Melo (Portugal): Phage-host interaction with cells in different
	metabolic states: A <i>S. epidermidis</i> case
⑤ 17:00-17:15	Sonja Gostimirović (Serbia, Offer. pres.): Non-tailed icosahedral phages as
	antibacterial agents

Venue - Hall "SCHONDA 4" of the MONA PLAZA Hotel, Cara Uroša 62-64, First floor

SESSION IIIB-2

PANEL SESSION - INTRAHOSPITAL AND EMERGING INFECTIONS

Moderator: **Dušan Kekić**

७ 15:20-17:15 PANELISTS:

Miodrag Milenović (Serbia) Novica Nikolić (Serbia) Jelena Jordović (Serbia)







PRESENTING CASES:

Marija Rajković (Serbia): Fulminant necrotizing fasciitis: A fatal outcome. Case series **Elena Đukić (Serbia):** Unraveling the mystery: A case of septic shock with unknown orgin

Ana Mirković (Serbia): A case report of *Staphylococcus aureus* prosthetic valve endocarditis in patient with Randu – Osler – Weber syndrome

Martina Jug (Serbia): Aspergillosis - diagnostic and therapeutic challenges

↑ 17:45-19:15 POSTER VIEWING SESSION - HALL CLUB OF THE HOTEL PALACE, GROUND FLOOR, TOPLIČIN VENAC 23, BELGRADE

🗰 Saturday, April 6, 2024

○ 08:30-09:30 Registration of participants

Venue - Hall "DONJI DORĆOL" of the MONA PLAZA Hotel, Cara Uroša 62-64, First floor

SESSION IA-3

MICROBIAL GENETICS, METAGENOMICS AND METAPROTEOMICS (PART 3) - MICROBIOMES AND RECENT DEVELOPMENTS & MICROBIAL GENOMES AND THEIR EVOLUTION Chaired by: Tamara Janakiev & Alfonso Esposito

Ō 09:30-09:55	Nađa Nikolić (Serbia): Microbiomes in oral carcinomas
Ō 09:55-10:20	Alfonso Esposito (Italy): Next-Generation Sequencing and Bioinformatics: How does
	microbiology benefit from cutting edge technologies?
Ō 10:20-10:45	Tamara Janakiev (Serbia): Plant microbiomes: from diversity to healthy crops
Ō 10:45-11:00	Maurizio Zotti (Italy, Offer. pres.): Microbiome associated with mycelial activity
	of three species of <i>Basidiomycetes</i> : Fairy rings in the gardens of the Royal Palace of
	Caserta (Italy)
Ō 11:00-11:15	Daria Tsibulskaia (Serbia, Offer. pres.): Description of a new potential aggregation
	factor from the <i>Streptococcus thermophilus</i> genome
Ō 11:15-11:40	Jose Alexander (USA) - online: Implementation of a rapid, cost-effective, and
	clinically focused NGS solution

Venue - Hall "SCHONDA 4" of the MONA PLAZA Hotel, Cara Uroša 62-64, First floor

SESSION IB-3

HEALTH MICROBIOLOGY AND BIOTECHNOLOGY & ALTERNATIVE APPROACHES IN ANTIMICROBIAL CONTROL (PART 2)

Chaired by: Lidija Đokić & Jon Salmanton-García

O9:30-09:55 Marina Šantić (Croatia): Legionella pneumophila - journey from the environment to human macrophages













Ō 09:55-10:20	Jon Salmanton-García (Germany): Overview on the current situation on
	epidemiology and management of IFI and future perspectives
Ō 10:20-10:45	Ivana Čolović Čalovski (Serbia): Diagnosis of intestinal helminth infections:
	strengths and limitations
Ō 10:45-11:10	Eleonora Dubljanin (Serbia): Biomarker guided antifungal therapy: a current state of
	laboratory mycology and antifungal management
Ō 11:10-11:35	Lidija Đokić (Serbia): New approaches in the treatment of chronic bacterial
	infections

(5) 11:40-12:10 COFFEE BREAK

Venue - Hall "DONJI DORĆOL" of the MONA PLAZA Hotel, Cara Uroša 62-64, First floor

SESSION IIA-3

DOM

ALTERNATIVE APPROACHES IN ANTIMICROBIAL CONTROL (PART 3) - BIOTECHNOLOGICAL APPROACH OF USING NATURAL PRODUCTS & NANOTECHNOLOGY IN MICROBIOLOGY Chaired by: Marina Soković & Ivana Gobin

	12:10-12:35	Marina Soković (Serbia): Microfungi as a target and source of valuable compounds
Ō	12:35-13:00	Ivana Gobin (Croatia): Biofilms in premise plumbing systems - current challenges and
		potential solutions
Ō	13:00-13:25	Marina T. Milenković (Serbia): Herbal products as an alternative to antibiotics:
		application possibilities and limitations
Ō	13:25-13:50	Tatjana Stević (Serbia): Biocontrol activity of plant products against plant pathogens
Ō	13:50-14:05	Miroslav Dinić (Serbia, Offer. pres.): Host-microbiota interplay regulates epithelial
		barrier function and wound healing

• Venue - Hall "SCHONDA 4" of the MONA PLAZA Hotel, Cara Uroša 62-64, First floor

SESSION IIB-3

WORKSHOP "NEXT GENERATION SEQUENCING (NGS) IN MICROBIOLOGY "

Moderators: Valentina Đorđević & Ivana Morić

Ō 12:10-12:35	Valentina Đorđević (Serbia): Center for Genome Sequencing and Bioinformatics
Ō 12:35-13:00	Ivana Morić (Serbia): Introduction to NGS technologies
⑤ 13:00-13:25	Mirjana Novković (Serbia): Genome sequence diversity of SARS-CoV-2 in Serbia
⑤ 13:25-13:55	during pandemic Nada Stanković & Ivana Galić (Serbia): Metagenomic studies
<u></u> 14:15-14:30	ORGANIZATIONAL CLOSING REMARKS



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