Scientific Programme

Tuesday, 19 September 2023

12:30 – 13:30	*Registration*
Opening Session	
Chairs: **Matthias Steiger** and **Stefan Plügl**, TU Wien, Austria	
13:30 -13:40	Welcome announcements
13:40 – 14:00	Environmental conditions define the energetics of bacterial dormancy and its antibiotic susceptibility **Teuta Pilizota**, University of Edinburgh, United Kingdom
Session 1: Molecular mechanisms of stress to low pH - from mechanisms to applications	
Co-organiser: EuroMicropH	Chairs: **Aricia Possas**, University of Córdoba, Spain **Aleksandra Djukić-Vuković**, University of Belgrade, Serbia
14:00 – 14:30	Transposon-directed insertion sequencing (TraDIS) can deepen our understanding of microbial stress responses **Peter Lund**, University of Birmingham, United Kingdom
14:30 – 15:00	New insights into mechanisms of acid resistance in *Listeria monocytogenes* using comparative genomics **Conor O'Byrne**, University of Galway, Ireland
15:00 – 15:15	Effect of low pH in the denitrification pathway and nitrous oxide reductase from *Marinobacter hydrocarbonoclasticus* **Sofia R. Pauleta**, Microbial Stress Lab, NOVA University Lisbon, Portugal
15:15 – 15:30	Agri-food industry wastes as substrates for lactic acid production – an overview of different strategies **Aleksandra Djukić- Vuković**, University of Belgrade, Serbia
15:30 – 16:30	*Coffee break and exhibition*

Tuesday, 19 September 2023

Session 2: Understanding and exploiting the impacts of low pH on micro-organisms

Co-organiser:	Chair:
EuroMicropH	**Ricardo Santos**, University of Lisboa, Portugal

16:30 – 17:00	Transporters involved in yeast pH and cation homeostases
	Hana Sychrová, Institute of Physiology of the Czech Academy of Sciences, Czech Republic
17:00 – 17:15	The V-shaped structuring facilitates the biofilm developmental process during acid stress adaptation of *L. plantarum*
	Athira Venugopal, The Hebrew University of Jerusalem, Israel
17:15 – 17:30	Landscape of expertise and collaborative opportunities from EuroMicropH network dashboard
	Immanuel Sanka, Tallinn University of Technology, Estonia
17:30 – 18:00	Low pH responses in micro-organisms: sharing knowledge and community building
	Daniela De Biase, Sapienza University of Rome, Italy
18:00	End of EuroMicropH Open Meeting
18:00 – 18:30	Poster flash talks (odd numbers, see list on page 9)
	Chair: **Karen Trchounian**, Yerevan State University, Armenia
18:30 – 22:00	Poster session A (odd numbers)

Wednesday, 20 September 2023

Session 3: Microbial stress in bioproduction systems (I)

Sponsor: BECKMAN COULTER Life Sciences

Chair: **Paola Branduardi**, University of Milan - Bicocca, Italy

9:00 – 9:30	Understanding solvent-tolerance of *Pseudomonas taiwanensis* in the context of biotechnological production of aromatics **Nick Wierckx**, Forschungszentrum Jülich, Germany
9:30 – 9:50	Combined sensor-based monitoring of oxidative stress and DNA-damage response in *Corynebacterium glutamicum* **Gerd Seibold**, Technical University of Denmark, DTU Bioengineering, Denmark
9:50 – 10:10	The role of magnetosomes in the protection against accumulation of intracellular reactive oxygen species in magnetotactic bacteria **Marta Maso Martinez**, Aston University, United Kingdom
10:10 – 10:30	Silver nanoparticle production as an adaptation mechanism in freshwater environment **Jana Sedláková**, University of St. Cyril and Methodius, Slovakia
10:30 – 11:00	*Coffee break and exhibition*

Wednesday, 20 September 2023

Session 4: Plant microbe interactions and soil microorganisms

Sponsor: Federation of European Microbiological Societies

Chair: **Diethard Mattanovich**, BOKU, Austria

11:00 – 11:30	Networks elucidate microbiome instability under stress and identify keystone microbes driving biodiversity and community assembly **Michelle Afkhami**, University of Miami, United States
11:30 – 11:50	A sustainable agricultural strategy to mitigate drought stress by utilizing exopolysaccharides-producing plant growth-promoting bacteria **Nur Ajijah**, Institute of Microbiology, Faculty of biology, Uniwersytet Warszawski, Poland
11:50 – 12:10	High CO_2-stressed cyanobacteria accumulate acidic EPS, which can efficiently restore degraded soil **Nina Kamennaya**, French Associates Institute for Agriculture and Biotechnology, The Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Israel
12:10 – 12:30	The negative effect of soil micro-polyethylene accumulation on plant growth and root-associated microbial communities **Wout Yi Moe Oo**, The Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Sde Boker Campus, Israel
12:30 – 14:00	*Lunch break and exhibition*

Wednesday, 20 September 2023

Session 5: Stresses associated with human microbe interaction

Sponsor: sbi SCIENTIFIC BIOPROCESSING

Chair: **Sofia R. Pauleta**, Microbial Stress Lab, NOVA University Lisbon, Portugal

14:00 – 14:30	Antimicrobial resistance and environmental stressors: the One-Health perspective
	Julia Vierheilig, TU Wien, Austria
14:30 – 14:50	Manganese uptake mediated by the NRAMP-type transporter MntH is required for acid tolerance in *Listeria monocytogenes*
	Jialun Wu, University of Galway, Ireland
14:50 – 15:10	The transmissible Locus of Stress Tolerance contributes to heat and oxidative stress tolerance while reducing desiccation tolerance by disaggregating proteins
	David Simpson, University of Alberta, Canada
15:10 – 15:30	Control of fungal stress response networks: alternative splicing and prion proteins *(online presentation)*
	João Neves-Da-Rocha, University of São Paulo, Brazil, Brazil
15:30 – 16:30	*Coffee break and exhibition*

Wednesday, 20 September 2023

Session 6: Challenges to microbial life in the natural environment: adaptation and evolution

Chair: **Peter Lund**, University Birmingham, United Kingdom

16:30 – 17:00	Microbial life in extreme environments and interactions with the geosphere
	Donato Giovannelli, University of Naples Federico II, Italy
17:00 – 17:20	CRISPR interference screens reveal trade-offs between growth rate and robustness
	Michael Jahn, Max-Planck-Unit for the Science of Pathogens, Germany
17:20 – 17:40	Can TraDIS predict the evolution of adaptations to stress?
	Mathew Milner, University of Birmingham, United Kingdom
17:40 - 18:00	Mitigating the trade-off between growth and stress resistance based on a cell-machine interface provide new insights into the role of phenotypic diversification
	Mathéo Delvenne, Université de Liège - Gembloux Agro-Bio Tech, Belgium
18:00 – 18:30	Flash poster talks (even numbers, see list on page 10)
	Chair: **Karen Trchounian**, Yerevan State University, Armenia
18:30 – 22:00	Poster session B (even numbers)

Thursday, 21 September 2023

Session 7: Microbial stress in bioproduction systems (II)

Sponsor: Jungbunzlauer

Chair: **John Morrissey**, University College of Cork, Ireland

9:00 – 9:30	Limits of metabolism at the thermodynamic edge of life **Kaspar Valgepea**, University of Tartu, Estonia
9:30 – 9:50	Adaptive laboratory evolution as a successful strategy to enhance the growth of *Clostridium carboxidivorans* on CO_2 and H_2 **Valeria Agostino**, Istituto Italiano di Tecnologia-CSFT@Torino, Italy
9:50 – 10:10	*In vivo* monitoring of reactive oxygen species in the yeast *Komagataella phaffii* using a genetically encoded fluorescent H_2O_2 biosensor **Victor Mendes Honorato**, Universität für Bodenkultur, Austria
10:10 – 10:30	Unveiling *Pseudomonas*' enzymatic toolbox for 5-(hydroxymethyl)furfural (HMF) detoxification: towards accelerated 2,5-furandicarboxylic acid (FDCA) production **Thorsten Lechtenberg**, Forschungszentrum Jülich, Germany
10:30 – 11:00	*Coffee break and exhibition*

Session 8: Molecular mechanisms of stress

Sponsor: bartelt LABOR-KOMPLETTAUSSTATTER Chemikalien · Geräte · Service · Software

Chair: **Daniela De Biase**, Sapienza University of Rome, Italy

11:00 – 11:30	Evolution targets two regulators of pH homeostasis, respiratory complex I and glutamate: GABA antiporter GadC, with alleles that lead to cytoplasmic acidification and hyper antibiotic tolerance **Bram Van den Bergh**, KU Leuven, Belgium
11:30 – 11:50	Role of reducing power and nutrients in tuning a one-component system in *P. aeruginosa* biofilm maintenance **Serena Rinaldo**, Dept. of Biochemical Sciences Sapienza University of Rome, Italy
11:50 – 12:10	*Bacillus subtilis* stress response mechanisms in response to nutrient limitation and competition with *Salmonella enterica* serovar Typhimurium **Eli Podnar**, University of Ljubljana, Biotechnical Faculty, Slovenia

12:10 – 12:30 Multiomics approach to study cold stress response of postharvest phytopathogenic fungi

Carmit Ziv, Agricultural Research Organization Volcani Center, Israel

Thursday, 21 September 2023

Closing Session

Chairs: **Matthias Steiger** and **Stefan Pflügl**, TU Wien, Austria

12:30 – 13:30 Closing the meeting

List of flash poster presentations

	Poster flash talks I (odd numbers), Tuesday, 19 September 2023, 18:00-18:30
1	Crosstalk between stress sensing and nutrients availability signalling pathways in *Saccharomyces cerevisiae*, **Riccardo Milanesi**, University of Milano-Bicocca, Italy
3	Population heterogeneities in induced microbial continuous cultivation, **Julian Kopp**, TU Wien/Institute of Chemical, Environmental and Bioscience Engineering, Austria
5	Adaptative laboratory evolution of *Yarrowia lipolytica* revealed key genes and pathways involved in long SCFAs assimilation and lipid production, **Sergio Morales Palomo**, IMDEA Energy, Spain
7	Antimicrobial activity of *Catha edulis* leaves extracts and its endophytes against soil bacteria, **Yoram Shotland**, Shamoon College of Engineering, Israel
9	Physiological response to osmotic stress in *H. litoralis* as a blueprint for exploring the novel genus of *Halopseudomonas*, **Luzie Kruse**, Heinrich Heine University Duesseldorf, Germany
11	Stimulation by stress - a closer look into nanomaterial-bacteria interactions, **Adrian Augustyniak**, University of Szczecin, Poland
13	Unravelling plant-bacteria interactions in MCPA-contaminated soils, **Elzbieta Mierzejewska-Sinner**, University of Lodz, Poland
15	Lactic acid modulates oxidative stress response to VBNC state in *Listeria innocua* challenged by nature-based antimicrobial formulation, **Esther Mwangi**, Hebrew University of Jerusalem, Israel
17	Proteomic and morphological insights into the exposure of soil bacteria to aluminium, **Nissem Abdeljelil**, Faculty of Science, Mons University, Belgium
19	Styrene production in *Pseudomonas taiwanensis* by *de novo* synthesis from glucose and biotransformation from trans-cinnamic acid, **Jakob Rönitz**, Forschungszentrum Jülich GmbH, Germany
21	Recovering the robustness of an impaired yeast strain through laboratory evolution, **Nathália Vilela**, Chalmers University, Sweden
23	*Presentation cancelled*

	Poster flash talks II (even numbers), Wednesday, 20 September 2023, 18:00-18:30
2	Exploring strategies for pushing methanogenic consortia from underground reservoirs, **Arianna Vizzarro**, Politecnico di Torino, Italy
4	Wood-decay fungal interactions include responses to oxidative, metabolite and acidic stress, **Taina Lundell**, University of Helsinki, Finland
6	Genetic heterogeneity of *Escherichia coli* Nissle 1917 strains during simulated long-term fermentations, **Lara Pauline Munkler**, DTU: Novo Nordisk Foundation Center for Biosustainability, Denmark
8	Physiological responses of cyanobacteria to excess CO_2, **May Barani Maung**, Bengurion University of the Negev, Israel
10	Grafting the ribulose monophosphate pathway into *Komagataella phaffii* for Increasing energy efficiency on methanol, **Miriam Kuzman**, acib - Austrian Centre of Industrial Biotechnology, Austria
12	Harnessing *E. coli* for microbial casein production, **Anna Maria Erian**, Fermify, Austria
14	Impact of low-frequency electromagnetic stress on yeast *Saccharomyces cerevisiae* growth, **Miroslava Sincak**, University of Ss. Cyril and Methodius in Trnava, Slovakia
16	The effect of pH on *Metschnikowia pulcherrima* antagonistic properties, **João Sousa**, University of Trás-os-Montes and Alto Douro, Portugal
18	Ectomycorhizal fungi as a reservoir of peroxidase genes, **Bohuš Kubala**, Institute of Molecular Biology SAS, Slovakia
20	Evaluation of dihydroxyacetone as an alternative carbon source for citric acid production by *Aspergillus niger*, **Elena Ortiz Perez**, ACIB Vienna, Austria
22	Flow cytometry as a technique for testing stress in bacteria induced by nanomaterials, **Kamila Dubrowska**, West Pomeranian University of Technology in Szczecin, Poland
24	Gotta catch'em all - wide stress response elicited in budding yeast by purine starvation, **Zane Ozoliņa**, University of Latvia, Institute of Microbiology and Biotechnology, Latvia