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FOOD SYSTEM
MICROBIOMES

Abstractbook

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with 121 Abstracts



Federation of European
Microbiological Societies



Poster Table



Poster # Poster Session 1: Microbiomes and the fertilizer crisis

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PS1-S1-PP01	Lorenzo Vergani	Study of the application of bio-based materials for the delivery of plant-growth promoting bacteria
PS1-S1-PP02	Birgit Wassermann	Reduced nitrogen fertilization enriches nitrogen-fixing bacteria in the <i>Brassica napus</i> seed microbiome across successive generations
PS1-S1-PP03	Pedro Mondaca	Effects of sustainable agricultural practices on soil microbial diversity, composition, and functions
PS1-S1-PP04	Gabriele Bellotti	Harnessing nitrogen fixation: Advances in diazotrophic bacteria engineering for sustainable crop production
PS1-S1-PP05	Federica Zanetti	Exploring the impact of intercropping camelina-pea on soil and rhizospheric microbiome dynamics and crop productivity
PS1-S1-SF01	Marta Acin	Harnessing biostimulants and data-driven microbiome analysis to address the fertilizer crisis: A sustainable approach
PS1-S1-SF02	Annamaria Bevivino	Potential of microbiome-based solution as green biofertilizer for sustainable maize productivity

Poster # Poster Session 1: Microbiomes mitigating biotic and abiotic stress

Poster #	Author	Title
PS1-S2-PP01	Francesca Mapelli	Bacterial plant probiotics modulate the endophytic community structure in grapevine micropropagated plants
PS1-S2-PP02	Giorgia Siviero	Evaluation of the association of a PGPB strain RCA25 with Introgression lines (ILs) of <i>Oryza rufipogon</i> X <i>Oryza sativa</i> cv <i>Vialone Nano</i>
PS1-S2-PP03	Lucia Foresto	TRIBIOME project: The influence of abiotic stressors on the wheat microbiome
PS1-S2-PP04	Maria Elena Antinori	Augmenting zinc phytoremediation via <i>Miscanthus</i> rhizobacteria: Microbial approaches to enhance plant functionality and alleviate abiotic stress
PS1-S2-SF01	Sonia Mazzarino	Isolation and selection of plant-associated microbes for the formulation of new inocula to be used in sustainable agriculture
PS1-S2-SF02	Sara Berzuini	Effect of different beneficial microorganisms in the growth promotion of camelina (<i>Camelina sativa</i> L. Crantz)

Poster # Poster Session 2: The edible microbiome

PS2-S7-PP01	Madeleine Spatz	Title Ferments of the Future: A public-private partnership to accelerate research and innovation on ferments, fermented foods and biopreservation
PS2-S7-SF01	Matevž Zlatnar	Unravelling the fermented olives microbiome: Bacterial diversity, function and its importance for human health

Poster # Poster Session 2: Microbiomes for improving health and well-being

PS2-S8-PP01	Juan Lombardo-Hernández	Title Probiotic bacteria <i>Lactiplantibacillus plantarum</i> is detected by primary neural cortical cells inducing transcriptional, morphological and functional changes
PS2-S8-PP02	Hacer Meral-Aktaş	Determination of some <i>in vitro</i> probiotic properties of bacteriocinogenic <i>Enterococcus faecium</i> H108 and H206 strains
PS2-S8-PP03	Marwane Bourqgia Ramzi	Probiotics and gut microbiota-brain axis: Exploring bioelectrical communication through enterococci
PS2-S8-PP04	Jesus Mansilla	<i>E. coli</i> and the microbiota-gut-brain axis: Bioelectrical connection
PS2-S8-PP05	Robin Duncan	<i>In vitro</i> assessment of the effect of commercial botanical products on the human faecal bacterial community structure
PS2-S8-PP06	Elisa Di Stefano	<i>In situ</i> phytate degradation by <i>Bifidobacterium</i> spp. as a novel approach to tackle micronutrients deficiencies in early life.
PS2-S8-SF01	Gianfranco Picone	The application of High-Resolution Nuclear Magnetic Resonance (HR NMR) in metabolomic analyses of meconium and stool in newborns - the MABEL project: A preliminary study
PS2-S8-SF02	Nicola Mangieri	Role of fermented oat drink and fermented milk compared to freeze-dried cells in the survival of the probiotic strain <i>Lacticaseibacillus rhamnosus</i> CRL 1505 in human gastrointestinal transit
PS2-S8-SF03	Agapi Doulgeraki	Impact of an 8 weeks intervention with orange juice enriched with probiotics and vitamin D on the diet of volunteers at high cardiometabolic risk

Poster # Poster Session 2: Microbiomes for plant fermentation

PS2-S9-PP01	Eugenio Parene	Title The bacterial microbiota of table olives: A metastudy
PS2-S9-PP02	Despina Langari	Lactic acid bacteria ecology changes along the Spanish style cv. Chalkidiki green table olives spontaneously fermented under high and low NaCl conditions using classical microbiological and molecular techniques



Opening Keynote

Poster Session 2: Microbiomes for improving health and well-being

PS2-S8-PP01 Probiotic bacteria *Lactiplantibacillus plantarum* is detected by primary neural cortical cells inducing transcriptional, morphological and functional changes.

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The interaction of bacteria with various somatic cell types is an exciting emerging field. Despite the known effects of microbiota on the gut-brain axis, very little is known about the direct interactions that bacteria could have with neurons, both in terms of molecular mechanisms and information transfer. In order to study these communication mechanisms, this study designs an in vitro model to co-culture microbiota-bacteria *Lactiplantibacillus plantarum* with neural cortical cells and analyses the effects of this process in both populations. Here, we show how bacteria and neurons can be co-cultured, and demonstrate a novel integrated platform that facilitates the analysis of neuronal-bacteria communication. The results we obtained showed that *L. plantarum* is capable of adhering to the surface of the neural culture and the amount of attached bacteria increases with co-culture time. In addition, neural co-cultured cells undergo changes in gene expression patterns and induce morphological and functional changes in the expression of key proteins in neuroplasticity such as Synapsin I and pCREB. Finally, using real-time optical (calcium signalling) readouts, we show that neural cells react to the presence and co-culture with bacteria cells increasing cytoplasmatic Ca²⁺ signalling. Our proof-of-principle data reveal crosstalk between these co-cultured cells and illustrate a novel example of cross-kingdom communication between highly diverse cell types. The ability to eavesdrop on information passing between these two very different levels of biological organization will facilitate insight into evolutionary cell biology and could impact the understanding of brain-bacteria communication for diagnosis or treatment of neuronal states in health and disease.



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