

TUESDAY 23 September 2025

16:00 Registration

16:45 Institutional Greetings
Chairperson: **Carlo G. Rizzello**

Rosalba Lanciotti - President of SIMTREA
Antonella Polimeni - Rector of Sapienza University of Rome
Maria Sabrina Sarto - Deputy Rector for Research, Sapienza University of Rome
Cristina Di Domizio - Agrifood National Cluster CL.A.N.

17:15 Opening Lecture
From single bacterial cells to microbial communities: a round trip to unlock the secrets and technological significance of microbial ecosystems characteristic of dairy niches – The Natural Whey Starter
Erasmus Neviani, University of Parma, Italy

18:00 Welcome Ceremony aperitif
featuring a selection of traditional baked goods from the Consorzio per la Tutela del Lievito Madre da Rinfresco

WEDNESDAY 24 September 2025

08:30 Registration

SESSION 1:
SYSTEMS MICROBIOLOGY, FUNCTIONAL GENOMICS, GUT MICROBIOTA

Chairpersons: **Marco Gobbetti**, **Luca Cocolin**, **Alan Walker**

09:00 Plenary lecture:
The human gut microbiota: Hopes, hypes and prospects for therapeutic interventions
Alan Walker, University of Aberdeen, United Kingdom

Genome-wide association analysis and metabolic profiling reveal the high complexity of salt tolerance polymorphism in the nitrogen-fixing Sinorhizobium meliloti
Agnese Bellabarba

Beneficial effects of selected food-associated Lactiplantibacillus plantarum on social behaviors, intestinal permeability and gut microbiota in a genetic mouse model of autism spectrum disorders
Roberta Prete

A novel plant-based food to make the benefits of the Mediterranean diet accessible to non-adherent people
Andrea Polo

Evaluation of a BSH-positive probiotic strain using the SHIME® model: insights into bile acid metabolism and microbiota modulation of mild hypercholesterolemic donor
Amanda Vaccalluzzo

11:00 COFFEE BREAK & POSTER SESSION

Enduring the cold: molecular strategies of Mrakia gelida under temperature stress
Daniele Andreani

Impact of chitosan-TPP nanoparticles loaded with olive pomace extract on gut microbiota: an in vitro SHIME® study
Martina Ben

Development of a comprehensive cheese metagenome catalogue reveals potential markers of origin and quality
Raffaele Magliulo

Application of new genomic techniques in Bifidobacterium animalis: removing tetracycline resistance while preserving probiotic properties
Marianna Bozzetti

Seasonal variation as the main driver of gut microbiota composition in Apis mellifera from the Natural Park of Mount Conero (central Italy)
Andrea Marcelli

New functional food effects on gut microbiota-related wellness: The multi-unit in vitro colon model to evaluate gut health
Pamela Vernocchi

12:45 LUNCH
featuring a selection of traditional Italian cured meats from CLAI Cooperative

SESSION 2:
MICROBIAL INTERACTIONS, FOOD PROCESSING AND FUTURE FOODS

Chairpersons: **Pier Sandro Cocconcelli**, **Rosalba Lanciotti**, **Eugenio Parente**

14:00 Plenary lecture
Advances in the methods for the inference of microbial associations in microbiomes
Eugenio Parente, University of Basilicata, Italy

A multi-omics approach to unravel microbial and metabolic drivers of biogenic amine formation in traditional cheeses
Leonardo Mancini

Functional traits of Propionibacterium freudenreichii and its lactic acid bacteria consortia as starters for faba bean fermentation
Rossana Coda

Promoting Innovation of ferMENTed fOods (PIMENTO): the COST action CA20128 outcomes
Vittorio Capozzi

Exploiting the potential of Weissella and Periweissella strains: new insights and novel applications in functional food design
Marco Montemurro

16:00 COFFEE BREAK & POSTER SESSION

From North to South: microbial profiles and ecological characteristics of Italian fermented sausages
Irene Franciosa

Synergistic application of microbial fermentation and High-Pressure Homogenization for the valorisation of brewer's spent grains into functional food ingredients
Margherita D'Alessandro

Another brick to understand the fructophilic behaviour of Hanseniaspora valbyensis
Rosangela Limongelli

Advancing "Ewiss" cheese production and strengthening its geographical identity through the use of selected autochthonous lactic and propionic acid bacteria
Giuliana Garofalo

Phage-Host coevolution: a strategy for improving lytic bacteriophage efficacy against STEC in food systems
Nicola Mangieri

Exploring yeasts as novel natural biopreservatives: antibacterial potential against foodborne pathogens
Laura Moretti

Variability of insect associate microbiome as function of rearing substrate and production scale: a case study on black soldier fly larvae reared on food-related side-streams
Giacomo Rossi

Antimicrobial and antibiofilm effects of nanoemulsions essential oils to control pathogen in cheese
Fabrizio Cappa

Microbiome mapping in the meat food chain: from farm to fork
Asim Ur Rahman

Whole-genome sequencing of a vineyard-related S. kudriavzevii strain reveals links to the hybrid population with S. cerevisiae
Jacopo Sica

20:30 GALA DINNER (Sapienza Botanical Garden)

THURSDAY 25 September 2025

SESSION 3:
SOIL AND PLANT MICROBIOTA: ROOTING FOR SUSTAINABLE AGRICULTURE

Chairpersons: **Diana Di Gioia**, **Olimpia Pepe**, **Angela Sessitsch**

09:00 Plenary lecture
The plant microbiome for sustainability
Angela Sessitsch, AIT Austrian Institute of Technology, Austria

Pyrroloquinoline quinone (PQQ)-producing Arthrobacter sp. D4 benefits peanut growth, induces antioxidant response and favourably modulates the rhizobacterial community: A prospective strategy towards antioxidant agriculture
Aditi Buch

Effects of municipal solid waste (MSW)-derived compost on the vineyard soil microbiota
Massimiliano Cardinale

Selection and evaluation of salt-tolerant Plant Growth Promoting Bacteria from halophyte plants for sustainable agriculture
Angela Racioppo

A simplified holobiont system revealed Rhizobium sp. GR12 as a possible versatile biofertilizer in grapevine under different abiotic stresses
Francesca Mapelli

11:00 COFFEE BREAK & POSTER SESSION

Enhancing agricultural sustainability: selection of Rhizobium sulae strains for optimized nitrogen fixation from populations of Sulla coronaria in Sicily
Monica Auteri

Monitoring of mobile genetic elements associated with AMR and VF in microbial biostimulants: a safety assessment based on in silico data and scientific literature
Gabriele Bellotti

Unravelling the endophytic bacterial microbiota of tomato roots: a step towards sustainable agriculture
Francesco Maria Fagnano

Genetic and functional diversity of arbuscular mycorrhizal fungal spore associated bacteria occurring in Mediterranean sand dunes
Arianna Grassi

Exploring the potential of lactic acid fermentation to produce innovative biostimulants
Jasmine Hadj Saadoun

Characterization of stable poultry manure: microbial composition and effects on crop growth and yield
Elia Pagliarini

Harnessing native Bacillus sp. for sustainable enhancement of saffron and other vegetatively propagated crops: A microbial strategy for ecological transition
Nitika Sharma

12:45 LUNCH

SESSION 4:
MICROBIAL ECOSYSTEMS, ENVIRONMENTAL SUSTAINABILITY

Chairpersons: **Daniele Daffonchio**, **Monica Agnolucci**, **Per Halkjær Nielsen**

14:00 Plenary lecture
Novel insights into the microbial diversity and ecology of global wastewater treatment and resource recovery systems
Per Halkjær Nielsen, Aalborg University, Denmark



MICROBIAL DIVERSITY 2025
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Isolation and molecular characterization of metabolites produced by an Antarctic fungal strain
Benedetta Fongaro

Impact of mowing frequency on soil microbial diversity of urban roadside lawns **Anna Markowicz**

Fungi and plastisphere: can this biodiversity hide biotechnological powerful biocatalysts? **Federica Spina**

Rebuilding belowground biodiversity: AMF and cover plants drive VOC regulation in urban soil restoration **Maria Alexandra Cucu**

16:00 COFFEE BREAK & POSTER SESSION

Spontaneous bio-recycling: recovering bioactive molecules through endogenous microbial maceration of hemp residues
Angela Conti

Development of a biotechnological method for enhanced oil recovery from exhausted oilfields on the Absheron Peninsula
Saida Aliyeva

Study of mycobiota in honeybee ecosystem through fermentation monitoring **Silvia Gattucci**

Harnessing novel indigenous bacterial potential for biodegradation of end-of-life tires using immobilized bioreactor **Shobha Mule**

Fungal diversity, a nature-based solution for rare elements recovery: investigation on interactions between fungal strains from culture collections and elements of strategic interest
Veronica Spinelli

Biological disinfection of domestic wastewater using moving bed biofilm reactor with saturated sand filter and its metagenomic analysis **Sanam Prabhudesai**

18:00 GUIDED TOUR OF THE SAPIENZA MUSEUMS

FRIDAY 26 September 2025

SESSION 5:
SCALING UP MICROBIAL SOLUTIONS FOR THE INDUSTRY

Chairpersons: **Danilo Ercolini, Carlo G. Rizzello, Stefan Cappelle**

09:00 Plenary lecture

Food fermentation for good: scaling tradition
Stefan Cappelle, Puratos, Belgium

A molecular method for rapid detection of a *Metschnikowia pulcherrima* strain during grapevine biocontrol in industrial withering conditions **Tiziana Nardi**

From waste to bioplastics: integrated approaches for Polyhydroxyalkanoates (PHAs) production using wild type and engineered microorganisms **Marina Basaglia**

Microbial biodiversity of traditional cheeses and natural dairy environments as drivers of food innovation **Federico Baruzzi**

Sequential anaerobic-aerobic bioremediation of chlorinated ethenes in a complex contaminated site **Sarah Zecchin**

11:00 COFFEE BREAK & POSTER SESSION with a selection of Barilla specialities

From lab to industry: scalable production of alkaline proteases from *Bacillus licheniformis* for sustainable biostimulant development
Beatrice Farda

Partial grains germination and targeted lactic acid bacteria fermentation: a powerful duo to enhance nutritional and functional quality in the baking industry **Giuseppe Perri**

Characterization of bacterial cellulose produced by *Komagataeibacter* sp. using agri-food byproducts as cost-effective substrates
Joel Armando Njieukam

Paper-based packaging and microbial ecosystems: a circular approach to food safety and environmental sustainability
Gianluca Castellini

Engineered yeasts for sustainable dsRNA production: molecular tool development and fermentation optimization **Alessandra Di Canito**

Microbial diversity and dynamics of fruit-flavored traditional yoghurt 'Ergo' in Southern Ethiopia **Habtamu Hawaz Taffese**

12:45 CLOSING CEREMONY AND AWARDS

13:15 LIGHT LUNCH

14:00 SIMTREA MEETING



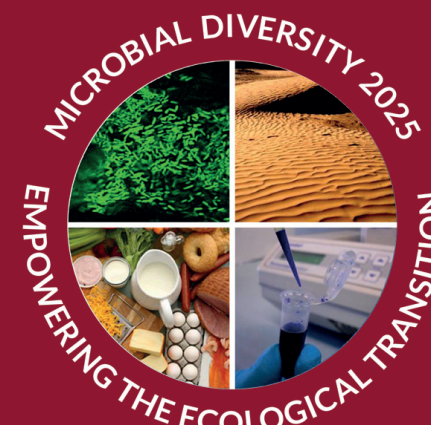
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SEPTEMBER 23-26, 2025
Rome, Italy



SIMTREA



SAPIENZA
UNIVERSITÀ DI ROMA

MICROBIAL DIVERSITY 2025
8th International Conference

**Microbial Diversity for Empowering
the Ecological Transition:
Research, Innovation and
Technological Transfer**

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CONGRESS VENUE

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