



SIMGBM
Società Italiana di
Microbiologia Generale
e Biotecnologie Microbiche

Microbiology 2017

XXXII SIMGBM Congress

Palermo, September 17-20, 2017

Programme



Sunday, September 17
Palazzo Steri (Piazza Marina 61)

- 14.30-16.00 **Registration**
- 16.00-16.45 **Plenary Lecture**, Chairs: M. Sosio & P. Visca
Marnix Medema (Wageningen University, The Netherlands)
Computational genomic approaches to study microbial biosynthetic diversity
- 16.45-18.45 **General Session: Microbial metabolisms: predictions and modelling**
Chairs: R. Fani & E. Ricca
- 16.45-17.15 **Emmanuelle Bouveret** (CNRS, Marseille, France)
Regulation of lipid metabolism in bacteria
- 17.15-17.45 **Marco Moracci** (Federico II University, Naples, Italy)
A metagenomic approach to the study of microbial metabolic pathways
- 17.45-18.15 **Marco Fondi** (University of Florence, Italy)
Genome-scale prediction of metabolic fluxes
- 18.15-18.45 **Donato Giovannelli** (Earth-Life Science Institute, Tokyo, Japan)
Extremophiles as a model to understand the emergence and evolution of metabolism
- 19.00 Welcome reception

Monday, September 18
Polo Didattico, Edificio 19 (Parco D'Orleans, Viale delle Scienze)

- 09.00-11.00 **General Session: Gene regulation in viruses and pathogenic bacteria**
Chairs: F. Briani & E. Tramontano
- 09.00-09.30 **Jonas Blomberg** (University of Uppsala, Sweden)
Endogenous retroviruses and regulatory RNAs: sequence traces of past battles between organism and microbe
- 09.30-10.00 **Riccardo Manganello** (University of Padova, Italy)
The sigma factors of Mycobacterium tuberculosis: physiology and role in virulence
- 10.00-10.30 **Antonina Dolei** (University of Sassari, Italy)
Human endogenous retroviruses: physiological functions, epigenetic dysregulation and transactivation by environmental stimuli
- 10.30-11.00 **Maria Letizia Di Martino** (University of Uppsala, Sweden)
One gene and two proteins: a leaderless mRNA supports the translation of a shorter form of the Shigella VirF regulator
- 11.00-11.30 Coffee break
- 11.30-13.30 **General Session: Complex microbial systems**
Chairs: F. Barras & B. Colonna
- 11.30-12.00 **Søren Molin** (Technical University of Denmark, Kgs Lyngby, Denmark)
Chronic bacterial infections in human airways constitute models for microbial population dynamics and adaptive and evolutionary processes
- 12.00-12.30 **Emilia Mauriello** (CNRS, Marseilles, France)
The nucleoid as a scaffold for bacterial chemosensory complexes
- 12.30-13.00 **Sacha Lucchini** (University of Salerno, Italy)
Role and diversity of global gene regulators in bacterial adaptation to the host
- 13.00-13.30 **Giordano Rampioni** (University Roma Tre, Italy)
Untangling the quorum sensing signaling network of Pseudomonas aeruginosa
- 13.30-14.30 Lunch
- 14.30-16.00 **Poster overview 1: (Sessions A and C)**

- 16.00-18.00 **General Session: Extracellular vesicles from bacteria to animal cells**
Chairs: E. Affabris & AM. Puglia
- 16.00-16.30 **Meta J. Kuehn** (Duke University, Durham, North Carolina, USA)
Origins and Functionality of Outer Membrane Vesicles
- 16.30-17.00 **Andreas S. Baur** (University of Erlangen, Germany)
Plasma extracellular vesicles in health and disease: the biomarker revolution in Medicine?
- 17.00-17.30 **Mariagrazia Pizza** (GSK, Siena, Italy)
Outer Membrane Vesicles in vaccinology
- 17.30-18.00 **Claudia Arenaccio** (University Roma Tre, Italy)
Exosomes in HIV-1 pathogenesis
- 18.15-20.15 Guided tour discovering the Norman-Arab heritage sites of Palermo

Tuesday, September 19

Polo Didattico, Edificio 19 (Parco D'Orleans, Viale delle Scienze)

- 09.00-11.00 **General Session: New frontiers in extreme marine microbiology: ecology, biotechnology and evolution**
Chairs: E. Ricca & L. Vezzulli
- 09.00-09.30 **Costantino Vetriani** (Rutgers University, New Jersey, USA)
Prokaryotic diversity and function at a shallow-water gas vent site in the Tyrrhenian Sea
- 09.30-10.00 **Michail Yakimov** (Inst. Coastal Marine Environment, CNR Messina, Italy)
Evolutionary and biotechnological aspects of studying the deep-sea haloarchaea
- 10.00-10.30 **Angelo Fontana** (Institute of Chemistry of Biomolecules, CNR, Naples, Italy)
*Capnophilic lactic fermentation and hydrogen synthesis by *Thermotoga neapolitana**
- 10.30-11.00 **Gian Marco Luna** (Institute of Marine Sciences, Venice, Italy)
Viruses in the dark, deep ocean
- 11.00-11.30 Coffee break
- 11.30-13.30 **General Session: Plant-microbe interactions reloaded: new frameworks for old partners**
Chairs: AM. Puglia & C. Viti
- 11.30-12.00 **George C. diCenzo** (McMaster University, Hamilton, Canada)
Towards the minimal rhizobium N₂-fixing symbiotic genome
- 12.00-12.30 **Davide Bulgarelli** (University of Dundee, Dundee, Scotland, UK)
Defining the host control of the rhizosphere bacterial microbiota
- 12.30-13.00 **Alessio Mengoni** (University of Florence, Italy)
Genome and metabolic evolution of the symbiotic rhizobia
- 13.00-13.30 **Massimiliano Cardinale** (IFZ Justus-Liebig-University, Giessen, Germany)
Diversity and specificity of the seed microbiota
- 13.30-14.30 Lunch
- 14.30-16.00 **Poster Overview 2: (Session B)**
- 16.00-16.45 **Plenary Lecture**, Chairs: F. Briani & P. Visca
E. Gerhart H. Wagner (University of Uppsala, Sweden)
It's ok to be different – featuring toxin-antitoxin-driven persisters
- 16.45-18.00 **Prizes Presentation**
- 16.45-17.10 **Franco Tatò Prize 2017**
Sabrina Duranti (University of Parma)
Genetic adaptation of bifidobacteria to the human gut: insights from genomics and transcriptomics analyses

- 17.10-17.35 **Mario Campa Prize 2017**
Anella Saggese (University of Naples)
 Analysis of the spore structure in the model species *Bacillus subtilis* and *Bacillus megaterium*
- 17.35-18.00 **Naicons Prize 2017**
Angela Casillo (University of Naples)
 Anti-Biofilm Activity of a Long-Chain Fatty Aldehyde from Antarctic *Pseudoalteromonas haloplanktis* TAC125 against *Staphylococcus epidermidis* Biofilm
- 18.00-20.00 Annual Society Members' Meeting
- 20.30 Social dinner (Palazzo Fatta, Piazza Marina 19, 20.30)

Wednesday, September 20
Polo Didattico, Edificio 19 (Parco D'Orleans, Viale delle Scienze)

- 09.30-10.15 **Plenary Lecture**, Chairs: P. Branduardi & M. Ruzzi
Michael Sauer (Boku University of Vienna, Austria)
Synthetic and diverse - microbiology on duty in industry
- 10.15-10.45 Coffee break
- 10.45-13.15 **Parallel Sessions: Oral presentations of selected abstracts**
Session A: Microbial genetics and genomics
 Chairs: L. Baccigalupi & F. Iannelli
- Francesco Ardizzone** (University of Palermo)
 A "fat" Streptomycete strain overproduces antibiotics
- Federica Briani** (University of Milan)
 Temperature-responsive regulation of the *Escherichia coli* *lpxT* gene
- Marilena Falcone** (University of Milan)
 Dissecting the role of the small RNA ErsA in *Pseudomonas aeruginosa* motility and biofilm regulation
- Alessandro Cascioferro** (Institut Pasteur, Paris)
 PknG senses amino acid availability to control metabolism and virulence of *Mycobacterium tuberculosis*
- Martina Pasqua** (Sapienza University of Rome)
 Understanding the expression profile of efflux pumps during the intracellular life of *Shigella*
- Daniela Visaggio** (University of Roma Tre)
 Bioluminescence-based biosensor for the detection of the *Pseudomonas aeruginosa* siderophore pyochelin
- Eleonora Gaspari** (Naicons, Milan)
 Insights into the Biosynthesis of Pseudouridylicin, a new RNA Polymerase Inhibitor
- Marco Di Salvo** (University of Salento, Lecce)
 G4PromFinder: an algorithm for predicting transcription promoters in GC-rich bacterial genomes based on AT-rich elements and G-quadruplex motifs
- Session B: Environmental and industrial microbiology**
 Chairs: L. Leoni & M. Petruccioli
- Cristiana Sigona** (University of Pisa)
 Effects of ciliates and rotifers on fungal degradation of natural tannins in bench tests
- Marta Mangifesta** (University of Parma)
 Unveiling gut microbiota biogeography across the mammalian branch of the tree of life
- Matteo Daghighi** (University of Milano-Bicocca)
 BTEX removal with bioelectrochemical systems

Elisa Binda (University of Insubria, Varese)

VanYn, a novel enzyme involved in glycopeptide resistance: a target for screening in the search of novel inhibitors of antibiotic resistance

Emanuela Claudia La Marca (University of Palermo)

Biological diversity of the microbial film associated with the central-Mediterranean *Dendropoma cristatum* (Biondi, 1859) reefs

Mariamichela Lanzilli (University of Naples)

Adsorption of a thermoacidophilic peroxiredoxin of *Sulfolobus solfataricus* on *Bacillus megaterium* spores

Eleonora Carota (Tuscia University, Viterbo)

Cryptococcus curvatus: a versatile yeast for the bioconversion of agro-industrial wastes into microbial oils of industrial interest

Alberto Sutura (University of Palermo)

Enhancement of antibiotic productions by plasma modified PLA electrospun membranes in *Streptomyces coelicolor* immobilized-cell cultivations

Concetta Lauro (University of Naples)

Polar Marine Bacteria As Novel Source Of Anti-Biofilm Agents

Daniele Ghezzi (University of Bologna)

Exploring the microbial diversity featuring the unique biospeleothems from the quartz-sandstone cave Imawari Yeuta in Auyan Tepui (Venezuela)

Session C: Interactions between microbes/viruses and their hosts

Chairs: P. Alifano & O. Jousson

Alessandra Aiello (University of Roma Tre)

Characterization of the effects induced by the HIV-1 recNEF_{SF2} protein on plasmacytoid dendritic cells

Angela Corona (University of Cagliari)

A Structure-Based Virtual Screening and site directed mutagenesis approach identify new promising HIV-1 RNase H inhibitors

Francesca Esposito (University of Cagliari)

Discovery of dual allosteric Integrase and Reverse Transcriptase associated Ribonuclease H activities inhibitors: investigation of dihydroxyindole-2-carboxylic acids in the HIV-1 integrase sucrose binding pocket

Elisa Fanunza (University of Cagliari)

Single compound from *Onopordum illyricum* is able to counteract Ebola virus VP35 protein inhibition of the interferon cascade

Marco Maria D'Andrea (University of Siena)

Isolation and characterization of lytic bacteriophages targeting major multi-drug resistant high-risk clones of carbapenemase-producing *Klebsiella pneumoniae*

Daria Bottai (University of Pisa)

Sensitivity to oxidative stress and hypoxia in ancestral and modern *Mycobacterium tuberculosis* strains

Giulia Giallonardi (University of Roma Tre)

Alkyl-quinolone-dependent quorum sensing controls prophage activation, autolysis and antibiotic resistance in *Pseudomonas aeruginosa* biofilm

Makrina Totsika (Queensland University of Technology, Australia)

E. coli ST131: a versatile multidrug resistant pathogen in and outside the gut

Francesca Turroni (University of Parma)

The fimbriome of the genus *Bifidobacterium* represents extracellular structures that modulate interactions with the mammalian gut

Annamaria Bevivino (ENEA Casaccia Research Center, Rome)

Time-resolved metagenomic identifies key features in the co-evolution of bacterial communities and cystic fibrosis

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