



Meeting Intersezioni

Riunione annuale congiunta delle Sezioni Puglia-Basilicata-Calabria e Sicilia della Società Italiana di Biochimica e Biologia Molecolare



3-5 Ottobre 2024

Università degli Studi di Messina

Aula Magna Dipartimento di Sc. Chimiche, Biologiche, Farmaceutiche ed Ambientali

Contrada Papardo Sperone, 31, 98100 Messina ME





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SCIENTIFIC PROGRAM

Comitato Scientifico:

Prof. Vito De Pinto **UNICT**, Prof. Claudia Piccoli **UNIFG**, Dott. Simona Campora **UNIPA**,
Dott. Roberta Fusco **UNIME**, Dott. Lucia Longhitano **UNICT**, Dott. Ilenia Matera **UNIBAS**,
Dott. Elena Piccinin **UNIBA**, Prof. Maria Francesca Scalise **UNICAL**

Comitato Organizzatore Locale:

Prof. Davide Barreca **UNIME**, Prof. Mhammed Aguenouz **UNIME**, Prof. Giuseppe Campo **UNIME**,
Prof. Rosanna Di Paola **UNIME**, Prof. Salvatore Oddo **UNIME**, Prof. Ester Tellone **UNIME**,
Dott. Roberta Fusco **UNIME**



Thursday, October 3

14:00-15:30 Registration of Participants

15:30-15:40 Institutional address

15:40-16:00 Welcome address (Italia Di Liegro (SIB Natl. Committee), Vito De Pinto (SIB Sicily), Claudia Piccoli (SIB PugliaBasilicataCalabria), Davide Barreca (Organizing Committee)

16:00-17:30 Chair: Vincenza Dolce (UniCal), Luisa Tesoriere (UniPa)

16:00-16:30 Lecture: Davide Barreca (UniMe)

Activity-Guided Fractionation of polyphenols for the characterization of their biochemical potentialities and suitability to create new materials

SESSION 1 - STRUCTURAL AND INTERACTIVE BIOCHEMISTRY

16:30-16:40 **Ciro L. Pierri**, Associate professor (UniBa)

Anti-infective strategies based on neuraminidase diversity: implications for selectivity

16:40-16:50 **Michele Galluccio**, Associate professor (UniCalabria)

The human SLC38A2 (SNAT2) gene: two different protein isoforms derived from an exon skipping

16:50-17:00 **Angela Ostuni**, Associate Professor (UniBas)

A combined metabolomics analysis by 1H-NMR spectroscopy and biochemical studies as a useful strategy to evaluate the biochemical characteristics of follicular fluids of women approaching in vitro fertilization

17:00-17:10 **Onofrio Laselva**, Researcher (RTD-B) (UniFg)

Identification of binding site for Ivacaftor on CFTR and its effect on mitochondrial function

17:10-17:20 **Alessandra Saitta**, Postdoc (UniMe)

Assessing the Molecular Relationship Among miR-125b, A β , and Tau

17:20-17:30 **Nicolò Musso**, Researcher (RTT) (UniKore)

Relationship between Electrorotation Spectrum and Membrane Associated Region1 Binding Protein (SMAR1) and Focal Adhesion Kinase (FAK) Gene Expression

17:30-18:00 Coffee break

18:00-18:50 Chair: Loredana Capobianco (UniLe), Rosanna Di Paola (UniMe)

SESSION 2 - ADVANCES IN BIOTECHNOLOGICAL APPLICATIONS IN HUMAN DISEASE

18:00-18:10 **Patrizia Proia**, Associate Professor (UniPa)

New strategies to improve strength performance reducing metabolic stress with Taopatch® technologies

18:10-18:20 **Laura De Plano**, Researcher (RTD-A) (UniMe)

Generation of multifunctional phages for in vitro diagnosis

18:20-18:30 **Aleksandra Agafonova**, PhD student (UniCt)

The Inner Blood-Retinal Barrier-on-a-Chip: Cell Organization and Functionality Across Donor Variations

18:30-18:40 **Paolo Bonacci**, PhD student (UniCt)

Dynamic Regulation of Glucose Transporter Expression in Colorectal Cell Lines: a Proof of Concept for Tumor Targeting Strategies via Nanoparticles Delivery

18:40-18:50 **Gabriele Lo Buglio**, PhD student (UniPa)

Functionalized nanoparticles as drug delivery strategy in solid tumors

18:50-19:00 **Eugenia Messina**, Postdoc (UniBa)

Metabolic engineering of Yarrowia lipolytica for the upcycling of PET-derived monomers

Friday, October 4

9:00-11:10 Chair: Luigi Palmieri (UniBa), Mhammed Aguenouz (UniMe)

9:00-9:30 Lecture: Nazzareno Capitanio, (UniFg)

Dancing to the beat of your mitochondria: when it's time to make a change

SESSION 3 - MANAGING OXIDATIVE STRESS: STRATEGY FOR PREVENTION AND RECOVERY-1

- 9:30-9:40 Ilaria Nigro**, PhD student (UniBas)
URG7 protein protects against 6-OHDA induced oxidative stress in SH-SY5Y neuroblastoma cells
- 9:40-9:50 Silvia Boninelli**, PhD student (UniCt)
New insights into VDAC3 transcriptional regulation in response to oxidative stress
- 9:50-10:00 Alessia Arangia**, PhD student (UniMe)
Modulation of ferroptosis biomarkers by thinned apple polyphenols extract in acute and chronic lung injuries
- 10:00-10:10 Livia Interdonato**, PhD student (UniMe)
Screening of biochemical and molecular mechanism of secondary injury and repair after traumatic brain injury in mice
- 10:10-10:20 Francesca Inferrera**, PhD student (UniMe)
Evidence of mitochondrial imbalance in the muscle during fibromyalgia
- 10:20-10:30 Davide G. Franchina**, Postdoc (Stanford)
GSH-dependent redox balance defines distinct metabolic aspects of follicular and marginal zone B cells metabolism
- 10:30-10:40 Kostantinos Partsinevelos**, Visiting researcher (UniCt)
Toxicity induced by cigarette smoke and electronic cigarette aerosols
- 10:40- 10:50 Ilenia Matera**, PhD Student (UniBas)
Old drugs for new molecular targets: the complex activity of Probenecid
- 10:50- 11:00 Francesca Landini**, PhD Student (UniFg)
Lipa -/- mouse model shows mitochondrial dysfunction and autophagy deregulation rescued by a novel in vivo gene therapy

11:00-11:30 Coffee break

11:30-13:00 Chair: Deborah Fratantonio (UniLum), Angela D'Ascola (UniMe)

SESSION 4 - MANAGING OXIDATIVE STRESS: STRATEGY FOR PREVENTION AND RECOVERY-2

- 11:30-11:40 Stefano Putaggio**, Researcher (UniMe)
Collateral effects of an antimalarial on red blood cells metabolism: The Chloroquine
- 11:40-11:50 Elena Piccinin**, Researcher (RTD-B) (UniBa)
The antibiotics effect: focus on the intestinal epithelia
- 11:50-12:00 Francesco Vari**, PhD student (UniLe)
Oleylethanolamide (OEA) restores skeletal muscle dysmetabolism in pre-obese young rats
- 12:00-12:10 Marco Catania**, PhD Student (UniCt)
Bacterial-derived extracellular vesicles: new players in host-pathogen interaction
- 12:10-12:20 Francesco Molinari**, PhD student (UniMe)
Life cycle impact assessment of pesticides on human health and ecosystems
- 12:20-12:30 Giuseppe Bruschetta**, Researcher (UniMe)
Age and productive aptitude affect circulating serotonin (5-HT) and total thyroid hormones in cows
- 12:30-12:40 Gianluca A Franco**, PhD student (UniMe)
Interplay between Endocrine Disruptors and Neuroimmune System

12:40-12:50 **Ylenia Marino**, PhD student (UniMe)
Pain and the biochemistry of fibromyalgia: evidence of mitochondrial dysfunction

13:00-15:00 Lunch

15:00-16:50 Chair: *Domenica Scumaci (UniCz), Daniele Tibullo (UniCt)*

15:00-15:30 Lecture: *Sonia Emanuele, (UniPa)*

Resistance mechanisms to 5'-Fluorouracil in colon cancer cells and the sensitizing effects of the HDAC inhibitor ITF2357: the involvement of lipid metabolism and lncRNA H19

SESSION 5 – ADVANCES IN CANCER BIOCHEMISTRY AND TREATMENT

- 15:30-15:40** **Sebastiano Giallongo**, Researcher (RTT) (UniKore)
Glutamate rewires mesenchymal stromal cells metabolic and epigenetic profile to promote cell senescence by intracellular fumarate accumulation
- 15:40-15:50** **Xena Giada Pappalardo**, Postdoc (UniCt)
Human VDAC pseudogene analysis reveals important role of VDAC1P8 in Acute Myeloid Leukaemia (AML)
- 15:50-16:00** **Federica Aliquo**, Postdoc (UniMe)
ESM-1 knockdown in IL-1 β activated mammary fibroblasts modulates breast cancer cell behavior
- 16:00-16:10** **Alessandra Lo Cicero**, Researcher (RTD-A) (UniPa)
Enhancing therapeutic efficacy through degradation of endogenous extracellular matrix in primary breast tumor spheroids
- 16:10-16:20** **Cristina Fontana**, Graduated Student (UniCz)
Proteomics strategies to disclose BRCA1-mutated breast cancer phenotype: functional and metabolic implications
- 16:20-16:30** **Paola Loguercio Polosa**, Associate Professor (UniBa)
Targeting mitochondria with ClpP protease activators as anticancer therapy in patients affected by Diffuse Intrinsic Pontine Glioma (DIPG)
- 16:30-16:40** **Silvana Filieri**, PhD Student (UniBa)
The effect of imipridone ONC 201 on energy metabolism in pediatric diffuse pontine glioma cell line cultures
- 16:40-16:50** **Luca Frattaruolo**, Postdoc (UniCal)
Specialized microbial peptides as promising mitochondrial inhibitors in glioblastoma treatment

16:50-17:20 Coffee break

17:20-18:50 Chair: *Consiglia Pacelli (UniFg), Giuseppina Laganà (UniMe)*

SESSION 6 – ADVANCES ON NEURODEGENERATION BIOCHEMISTRY AND STRATEGIES TO PREDICT AND PREVENT

- 17:20-17:30** **Antonella Caccamo**, Researcher (RTD-B) (UniMe)
Using a novel engineered phage to prevent A β toxicity
- 17:30-17:40** **Fabrizio Cavallaro**, PhD Student (UniCt)
The molecular aspects of interaction between A β oligomers and VDAC1: implications for mitochondria functionality in Alzheimer's disease
- 17:40-17:50** **Marika Lanza**, Researcher (RTD-A) (UniMe)
PF-04691502, a PI3K/mTOR dual inhibitor, ameliorates AD-like pathology in a mouse model of AD
- 17:50-18:00** **Iolanda Infantino**, PhD student (UniCt)
TSPO overexpression associates with defects in mitochondrial respiration and mitophagy in a mouse model of ALS

- 18:00-18:10** **Cristina L.R. Lipari**, Postdoc (UniCt)
AAV-mediated upregulation of VDAC1 rescues mitochondrial functionality in a mouse model of ALS
- 18:10-18:20** **Marica Antonicelli**, Postdoc (UniBa)
Impaired Mitochondrial Respiration and Calcium Homeostasis in Neuronal Progenitor cells from induced Pluripotent Stem Cells of patients affected by AGC1 deficiency
- 18:20-18:30** **Loredana Leggio**, Researcher (RTD-A) (UniCt)
Brain Region Specificity and Parkinson's Disease: Exploring the Neuroprotective Signature of Nigrostriatal Astrocyte-Derived Extracellular Vesicles
- 18:30-18:40** **Marco Falcone**, Master student (UniCt)
sEH/LOX-5 inhibition confers resistance to oxidative stress and mitochondrial dysfunction in an in vitro model of Parkinson's Disease
- 18:40-18:50** **Margherita Torre**, Postdoc (UniMe)
Neurofilaments levels in tears as potential biomarkers of retinal neurodegeneration in diabetic retinopathy

20:30 Social Dinner at “La Corte dei Mari”

Disco entertainment to follow

Saturday, October 5

09:00-11:30 Chair: Anna Rita Cappello (UniCal), Mario Allegra (UniPa)

09:00-09:30 Lecture: Cesare Indiveri (CNR-IBIOM)

The network of carnitine transporters in cell homeostasis and bioenergetics.

SESSION 7- IMPACT OF NATURAL BIOACTIVE PRODUCTS ON HEALTH METABOLISM-1

9:30-9:40 Ignazio Restivo, Postdoc (UniPa)

Eryptotic activity of aerosol extract derived from heated tobacco products

9:40-9:50 Giuseppe Tancredi Patanè, PhD Student (UniMe)

Biochemical modification of poly-vinyl-alcohol-based bioplastics with flavonoids and carbohydrate fraction obtained from Citrus waste products to increase its food packaging application

9:50-10:00 Federica Affranchi, PhD student (UniPa)

From By-Product to Bioactive: The Role of Subcritical Water Extraction in Enhancing Grape Pomace's Therapeutic Potential

10:00-10:10 Alessandro Maugeri, Researcher (RTD-A) (UniMe)

GABAA receptors are involved in the anti-epileptic effects of a polyphenol-rich extract of white grape juice

10:10-10:20 Alice Pantano, Postdoc (UniMe)

Curcumin reduces 6-mer HA-induced inflammation via NF-kB and Nrf-2 pathways in human chondrocytes

10:20-10:30 Valeria Consoli, PhD student (UniCt)

Effects of natural extract obtained from pomegranate wastes on benign prostatic hypertrophy models in vitro and in vivo

10:30-11:00 Coffee break

11:00-12:00 Chair: Mariafrancesca Scalise (UniCal), Giuseppe Maurizio Campo (UniMe)

SESSION 8- IMPACT OF NATURAL BIOACTIVE PRODUCTS ON HEALTH METABOLISM-2

11:00-11:10 Daniela Carlisi, Associate Professor (UniPa)

Mango extracts ameliorates obesity and MAFLD through activating the AMPK

11:10-11:20 Nicla Tranchida, PhD student (UniMe)

Dietary interventions in the management of fibromyalgia: potential benefits of Spirulina

11:20-11:30 Diana Di Liberto, Researcher (RTD-A) (UniPa)

Anti-inflammatory and antioxidant properties of Sicilian Extra Virgin Olive Oil Polyphenols-Enriched Extracts and their usefulness for the management of Rheumatoid Arthritis patients

11:30-11:40 Gabriele Bonaventura, Post-Doc (UniCt)

TG-2 expression as a key regulator of cell fate in a human neural stem cell model under hypoxia-reoxygenation condition: the rescue role of Astaxanthin

11:40-11:50 Annamaria Russo, PhD student (UniMe)

Influence of Morus Alba plant extract on erythrocyte metabolism

12:00-13:00 Award ceremony and Conclusions