

61° SIB MEETING Virtual Edition

24 September 2021

ROUND TABLES AND SELECTED SHORT TALKS

Friday September 24th

9:00 Round tables and selected posters (parallel sessions)

1) Metabolic rewiring in physiopathology

Chairpersons *Nico Mitro (Milan), Salvatore Nesci (Bologna), Serena Rinaldo (Rome)*

Lipid metabolism in physio-pathological conditions (09:00-10:30)

PICCININ Elena: Enterocyte PGC-1 α deletion protects against NAFLD and NASH

CATERINO Marianna: Lipidomic profiling in GSDIa patients

AUDANO Matteo: Zc3h10 regulates adipogenesis by controlling translation and F-actin/mitochondria interaction

OPPEDISANO Francesca: The Protective Effect of Cynara Cardunculus Extract in Diet-Induced NAFLD: Onset of hepatic steatosis, OCTN2 transporter and inflammation

COPPI Lara: Exploring novel pathways regulating adipose tissue pathophysiology

BORDONI Laura: Mitochondrial DNA in obesity: any association with one carbon cycle intermediates?

Energy metabolism and nutrient sensing in physiopathological processes (10:50-12:30)

SOLAINI Giancarlo: The ATPase inhibitor protein (IF1) promotes mitochondrial mass renewal in anoxic cancer cells.

GIORGIO Valentina: The mitochondrial inhibitor protein IF1 of the ATP synthase modulates the permeability transition pore in a human cancer cell model

GISSI Clarissa: Increased MtCK and ANT1 in aging Pin1 KO mice as a basis of augmented ADP sensitivity of mitochondrial respiration

PAGLIA Giuseppe: Influence of hypoxic interval training and hyperoxic exposure to the blood metabolome

DUATTI Assia: Stromal lactate promotes prostate cancer aggressiveness by enhancing collagen-dependent cancer cell colonization

IPPOLITO Luigi: Lactate rewires lipid metabolism and sustains a metabolic-epigenetic interplay in prostate cancer

GRILLO Elisabetta : Activated VEGFR2 rewires melanoma cell energy metabolism

2) Regulatory elements in signalling and networks

Chairpersons *Luigi Bagella (Sassari), Lucia Stefanini (Rome), Ivano Eberini (Milan)*

Session 1 (09:00-10:30)

MONACO Vittoria : Epigenetic analysis of histone modifications by mass spectrometry

ARESE Marzia: Nitro-oxidative stress and mitochondrial dysfunction induced by the environmental contaminants: NP, OP, PFOA and BPA, in human cell lines

D'ANGELO Massimiliano : Towards a molecular model of ribosome assembly

DE FELICE Martina : An in vitro model to mimic Intermittent Hypoxia condition on human CNS cells

GODEL Martina : P-Glycoprotein inhibitors as inducers of Immunogenic cell death

NARDI Federica : Gene editing and expression in hard-to-manipulate primary tumor cells by CRISPR/Cas9 and mRNA technology

PICCOLO Marialuisa: Safety and efficacy evaluation in vivo of an anticancer ruthenium (III) – based nanocomplex in a human preclinical model of breast cancer

ZAMMATARO Agatino: Investigation by a shotgun approach of the proteomic profile of rabbits' tears after treatment with a postbiotic drug

GIACOMELLI Chiara: Tendon regeneration: effects of biocompatible scaffolds on mesenchymal stem cell well-being and

differentiation

COZZOLINO Flora: Therapeutic targeting of Lyn kinase to treat chorea-acanthocytosis

MENSITIERI Francesca: Cytolysin A (ClyA) in E.coli: a tool for Outer Membrane Vesicles (OMVs) engineering

RINALDO Serena: Signal transduction and C-DI-GMP second messenger: novel tools to investigate the mechanism of nutrient sensing

Session 2 (10:50-12:30)

ROMANO Maria Fiammetta: EPIGENETIC REGULATION OF TRAIL-R2 EXPRESSION IN MELANOMA BY THE PEPTIDYL-PROLYL-ISOMERASE FKBP51

BARBERA Stefano : The C-type lectin CD93 controls endothelial cell migration via activation of the Rho family of small GTPases

BORGATTI Monica: Discovery of novel fetal hemoglobin inducers through small chemical library screening

CONSOLE Lara: Regulation of the Mitochondrial Carnitine/Acylcarnitine Carrier by neurotransmitters

RUSSO Maria: Cellular and Biochemical characterization of the new radio-resistant cell lines reveal a role of natural flavonoids to bypass senescence and protective autophagy

MOSCA Laura: S-Adenosyl-L-Methionine overcomes 5-FU-Induced resistance in colon cancer cells inhibiting P-Glycoprotein expression through NF- κ B Pathway.

ZINGHIRINO Federica: Characterization of human VDAC (Voltage Dependent Anion-selective Channels) genes expression and regulation

VALLETTI Francesca: A useful "easter-egg" in [FeFe] hydrogenase CbA5H: how protein morphing caused by "remote-controlling" mutations can grant protection from oxygen damage.

MONTAGNA Giulia: Mesenchymal stem cell in simulates microgravity: a study on the osteogenic differentiation

SAPONARO Andrea : Gating movements and ion permeation in HCN4 Pacemaker channels.

TRAMUTOLA Antonella: Role of miR-802 in Down Syndrome

3) Targeting metabolism in human diseases

Chairpersons *Daniele Condorelli (Catania) Angela Rizzo (Milan), Gennaro Sanità (Naples)*

Targeting metabolism in Cancer (09:00-10:30)

ANTONA Annamaria: CYTOTOXIC EFFECT OF THE ANTIPSYCHOTIC DRUG SPIPERONE IN COLORECTAL CANCER CELLS VIA A PLC/CA2+/UPR-MEDIATED PATHWAY

BOUZIDI Amami: ONE CARBON METABOLISM CONTROLS LUNG ADENOCARCINOMA CELLS METASTATIC POTENTIAL

CARRESE Barbara: HYBRID ALBUMIN NANOPARTICLES LOADED WITH DOXORUBICIN FOR THERANOSTIC APPROACH IN CANCER DISEASE

FRATTARUOLO Luca: FOF1-ATPASE INHIBITION BY THIOALBAMIDE DRIVES ANTITUMOR EFFECTS AND REDUCES TUMOR INVASIVENESS IN BREAST CANCER *IN VITRO* AND *IN VIVO* MODELS.

LEO Giovanni: THE ROLE OF LYSINE-SPECIFIC HISTONE DEMETHYLASE 1A (KDM1A/LSD1) IN DIFFERENTIATED AND STEM-LIKE COLORECTAL CANCER CELLS

LIBERATI Francesca Romana: RIBOREGULATION OF HUMAN SERINE HYDROXYMETHYLTRANSFERASE ACTIVITY IN CELLULAR METABOLISM

OLIVO Erika: INVESTIGATING THE ROLE OF MITOCHONDRIAL HIF-1A IN BRCA1-MEDIATED BREAST TUMORIGENESIS

MISSAGLIA Sara: FOXC2 OVEREXPRESSION ENHANCES ATGL-MEDIATED LIPID CATABOLISM AND PROMOTES CERVICAL CANCER CELLS PROLIFERATION

Targeting metabolism in Human Diseases (10:50-12:30)

ALLEGRA Mario: INDICAXANTHIN FROM OPUNTIA FICUS INDICA FRUIT AMELIORATES GLYCIDIC METABOLISM AND COUNTERACTS INSULIN RESISTANCE IN HIGH-FAT-DIET-FED MICE

DI FILIPPO Marzia: A MODEL-BASED DATA INTEGRATION PIPELINE TO CHARACTERIZE THE MULTI-LEVEL REGULATION OF CELL METABOLISM

LAZZARINO Giacomo: THE FOLLICULAR FLUID METABOLIC PATTERN: CORRELATION WITH FEMALE INFERTILITY AND OUTCOME MEASURES OF IN VITRO FERTILIZATION

MAGNIFICO Maria Chiara: IMPAIRED MITOCHONDRIAL RESPIRATION IN NEURON PROGENITOR CELLS FROM IPSCS OF PATIENTS AFFECTED BY AGC1 DEFICIENCY

MANFREDI Marcello: METABOLOGENOMICS TO INVESTIGATE GUT MICROBIOME IN A MOUSE MODEL OF ALZHEIMER DISEASE

MINGIONE Alessandra :INHIBITION OF SPHINGOLIPIDS SYNTHESIS AS A PHENOTYPE_MODIFYING THERAPY IN CYSTIC FIBROSIS

RISIGLIONE Pierpaolo: VDAC1-TARGETED PEPTIDE RESCUES MITOCHONDRIAL IMPAIRMENT BY RESTORING ADP/ATP FLUX IN AN ALS SOD1 G93A CELL MODEL

TRIPODI Farida: ANTI-AGING AND NEUROPROTECTIVE EFFECTS OF UNGUICULATA EXTRACTS

VARALDA Marco: SECOND GENERATION ANTIPSYCHOTICS INDUCE METABOLIC SYNDROME IN ADIPOSE TISSUE THROUGH APKC-DEPENDENT PATHWAY

4) Crosstalk at intra and intercellular levels

Chairpersons *Massimo Aureli (Milan), Eugenio Barone (Rome), Maria Francesca Scalise (Cosenza)*

Session 1 – General mechanisms (9:00-10:30)

CECCARELLI Lorenzo:Characterization of extracellular vesicles derived by human microglia cells

GERMELLI Lorenzo: Microglia regulate its phenotype and CNS microenvironment by modulating neurosteroids release

DE BEI Omar Cryo-EM reveals how hemophore binding to Hb prompts heme removal: a structural and mechanistic insight into the function of ISDB from *S.aureus*

FUSCO Roberta: The methyl ester of 2-cyano-3,12-dioxooleana-1,9-dien-28-oic acid reduces endometrial lesions development by modulating the NFkB and Nrf2 pathways

CULURCIELLO Rosanna: New recombinant angiogenin variants to clarify the role of the special enzymes in the stress granules recruitment

PROIETTI Silvia: Cross-talk between methylglyoxal and hormone signaling pathways in *A.thaliana*: GLY14 as novel player.

D'ADAMO Stefania: Nutraceutical supplementation modulates autophagy and fibril deposition in primary chondrocytes.

SCALCON Valeria:Role of glutaredoxin 2 in mitochondria: evidences from cellular and mouse models.

Session 2 – Molecular basis of Diseases (10:50-12:30)

VECCHIO Eleonora: IBTK loss inhibits beta-catenin/myc axis through the stabilization of GSK3beta and induces apoptosis in non-hodgkin lymphoma B-cells

STAMPONE Emanuela: The analysis of CDKN1C/p57^{Kip2} mutations reported in human diseases allows the identification of a novel nuclear localization signal in the human protein

CAPPIELLO Floriana: Immunomodulatory activities of ESC peptides in lung infection

BABBI Giulia: Analysis of the Huntingtin solvent accessible surface

FAZZARI Maria: GM1-oligosaccharide therapeutic potential for treatment of Rett syndrome

BELLONE Maria Laura: Eukaryotic translation initiation complex is the target of cannabidiolic acid in glioblastoma cancer-cell line

BRINDISI Matteo: New insights into cholesterol-mediated ERalpha activation in breast cancer progression and pro-tumoral microenvironment

SKOROKHOD Oleksii: Post-translational modifications of CYP4F11 by 4-hydroxynonenal inhibit enzyme omega-hydroxylation function: putative role in malaria immunosuppression

CORSETTO Paola Antonia: Exogenous Fatty acids modulate ER lipid composition and metabolism in breast cancer cells

5) Structural and molecular bases of pathologies

Chairpersons *Alessandro Aliverti (Milan), Barbara Cellini (Perugia), Angelo Toto (Rome)*

ARDINI Matteo "Towards the identification of pre-clinical drug candidates to a parasite's drug target by an integrative structural biology approach"

ASTEGNO Alessandra "UNIQUE CONFORMATION OF CYSTATHIONINE BETA-SYNTASE FROM TOXOPLASMA GONDII"

CICCARONE Fabio "Brown Adipose Tissue in Amyotrophic Lateral Sclerosis dysmetabolism"

DURATURO Francesca "Regulation of MSH2 expression via MiRNA"
FUSCO Laura "MXenes with immunomodulatory properties against SARS-CoV-2"
IOMMARINI Luisa "TMEM126A/OPA7 is a respiratory complex I assembly factor binding the ND4-module intermediate"
LOFFREDO Mariarosa "INVESTIGATION OF THE MOLECULAR MECHANISM OF ANTIMICROBIAL PEPTIDES IN KILLING AND INHIBITING BACTERIAL BIOFILMS"
LUCARIELLO Miriam "Pharmacological targeting of the CtBP1/BARS protein in cancer and in viral infection"
MARINO Valerio "An integrated experimental and computational investigation of heterogeneous molecular phenotypes in retinal dystrophies"
PICCARDUCCI Rebecca "IMPACT OF THE APOE E4 POLYMORPHISM ON THE ACETYLCHOLINE HOMEOSTASIS OF NEURONAL CELLS"
SAVOIARDO Castrense "DISEASE-RELATED VARIATION TYPES IN HUMAN GENES LINK TO MALADIES WITH PFAM AND INTERPRO MAPPING"
SPIZZICHINO Sharon: "Structural clues of Serine hydroxymethyltransferase (SHMT) riboregulation"

6) Agro-food by-products and waste for sustainable innovative applications

Chairpersons *Cristina Angeloni (Camerino), Carla Gentile (Palermo), Mohamed Sabbah (Nablus)*

Bio-catalysis for agro-food waste management (9:00-10:30)

BIUNDO Antonino: YARROWIA LIPOLYTICA AS A SUSTAINABLE MICROBIAL PLATFORM FOR CIRCULAR ADDED VALUE COMPOUNDS PRODUCTION
ROSINI Elena: SYSTEM BIOCATALYSIS: A MULTI-ENZYMATIC CASCADE PROCESS FOR PRODUCTION OF CIS,CIS-MUCONIC ACID
GALLO Giovanni: IDENTIFICATION AND CHARACTERIZATION OF THE BIOMASS DEGRADATIVE PROPERTIES OF ALICYCLOBACILLUS MALI FL18
ZULIANI Luca: LIGNOCELLULOLYTIC ENZYMES SECRETED BY MESOPHILIC AND THERMOPHILIC MICROBIAL CONSORTIA ENRICHED ON MUSHROOMS LITTER
AULITTO Martina: A THERMOPHILIC PLATFORM FOR THE SUSTAINABLE RECOVERY OF CELLULOSE FROM AGRI-FOOD RESIDUES
RESTAINO Odile Francesca: POSIDONIA OCEANICA "EGAGROPILI" FOR ENHANCING THE BIOTECHNOLOGICAL PRODUCTION OF MELANIN BY STREPTOMYCES ROSEOCHROMOGENES

Agro-food by-products and waste for nutraceutical applications (10:50-12:30)

CALICETI Cristiana: IBISBA, A VALORIZATION OF GRAPE POMACE FOR TOPICAL PREPARATION THROUGH NADES SUSTAINABLE EXTRACTION AND SKIN PERMEATION PROCESS TO COUNTERACT OXIDATIVE STRESS AND INFLAMMATION IN 3D HUMAN KERATINOCYTES
CIMINI Donatella: CHEST SHELLS AS WASTE MATERIAL FOR SUCCINIC ACID PRODUCTION FROM ACTINOBACILLUS SUCCINOGENES 130Z
DI FIENZA Mauro: UNIQUE DISTRIBUTED EUROPEAN RESEARCH INFRASTRUCTURE FOR BIOTECHNOLOGY
SIRACUSA Rosalba: HIDROX® ROLES IN NEUROPROTECTION: BIOCHEMICAL LINKS BETWEEN TRAUMATIC BRAIN INJURY AND ALZHEIMER'S DISEASE
D'AMBROSIO Sergio: APPLICATIONS OF BUFFALO MILK WHEY AS RENEWABLE WASTE SUBSTRATE
PANICHI Veronica: OLIVE-DERIVED POLYPHENOLS AS CHONDROPROTECTIVE COMPOUNDS IN IN VITRO MODELS OF OSTEOARTHRITIS