



UNIVERSITÀ
DEGLI STUDI
DI TORINO



ISCaM 2022 SCIENTIFIC PROGRAM

Torino, 29 June - 2 July 2022
(Titles of the talks to be confirmed)

Scientific organizers: Paolo E Porporato, Max Mazzone

Scientific Committee: ISCaM BOARD

Organizing Committee: Chiara Ambrogio, Enrico Patrucco, Miriam Martini, Erica Mina, Valentina Audrito, Valentina Rausch, Alessio Menga, Chiara Riganti, Giuseppe Ferrauto

Wednesday 29 June 2022

- 13:00 – 15:00 *Registration*
- 15:00 – 15:30 OPENING SESSION**
- 15:00 – 15:10 Welcome by Local Organizers
- 15:10 – 15:20 Welcome by ISCaM President
- 15:20 – 15:30 Welcome by UniTO Authorities



15:30 – 16:30 **OPENING LECTURE: Metabolism Meets Function**

Chair: Paolo E Porporato

The EMBO Keynote Lecture

Karen Vousden (Francis Crick Institute):
The role of ROS in cancer progression

16:30 – 17:00 *Coffee Break*

17:00 – 18:30 **SESSION 1: Perspectives in Metabolism**

Chairs: Miriam Martini (UniTO) & Michala Rolver (UCPH)

17:00 – 17:30 **Sara Zanivan** (CRUK Beatson Institute):
Cell metabolism defines pro-metastatic functions of cancer associated fibroblasts

17:30 – 18:30 Selected Talks (12'+3'):

1. Elena Rainero: "The extracellular matrix supports cancer cell growth under amino acid starvation by promoting tyrosine catabolism"
The University of Sheffield, School of Biosciences, Sheffield, UK

2. Sophie Trefely: "Subcellular acyl-coenzymeA analysis reveals distinct nuclear metabolism"
Babraham Institute, Epigenetics & Signalling Programmes, Cambridge, UK

3. Maria Chiara De Santis: "A lysosomal lipid switch sensitizes to nutrient deprivation and mTOR targeting in pancreatic cancer"
University of Torino, Molecular Biotechnology Center, Dept. Molecular Biotechnology and Health Sciences, Torino, Italy

4. Manuela Sollazzo: "Adaptive mechanisms triggered by metabolic rewiring upon Complex I impairment in ovarian cancer"
Department of Pharmacy and Biotechnology (FABIT), University of Bologna, Bologna, Italy

18:30 – 20:00 **WELCOME EVENT: Welcome Cocktail**



Thursday 30 June 2022

9:00 – 10:30 **SESSION 2: Targeting Metabolism**

Chairs: Chiara Ambrogio (UniTO) & Elena Rainero (U.Sheffield)

9:00 – 9:50 **Eyal Gottlieb** (Technion-Israel Institute of Technology):
Therapeutic opportunities in exploiting tumors' environmental and genetic metabolic strains

9:50 – 10:30 Poster Teaser Talks (4'):

1. Roberta Sartori: "Role of the BMP pathway in cancer cachexia"
University of Padova, Department of Biomedical Sciences, Padova, Italy

2. Margherita Cortini: "Unfolded protein response triggered by extracellular acidosis is a survival mechanism in osteosarcoma cells to cope with lipid accumulation"
Istituto Ortopedico Rizzoli, Dipartimento Rizzoli RIT, Bologna, Italy

3. Vincenzo Ciminale: "Targeting the mTOR pathway to disrupt redox balance and induce death in T-acute lymphoblastic leukemia cells"
University of Padova, Department of Surgery and Oncology, Padova, Italy

4. Muhlis Akman: "TFEB drives chemo-immuno-resistance in lung cancer"
University of Torino, Department of Oncology, Turin, Italy

5. Andrea Iannello: "Metabolic features and dependencies of Richter's syndrome cells open for novel targeting strategies"
University of Torino, Dept. of Medical Sciences, Turin, Italy

6. Sara Granja: "CD147 in cancer immunosurveillance: new tool for T-cell based immunotherapy?"
University of Minho, ICVS/3Bs, Braga, Portugal

10:30 – 11:00 *Coffee Break*



11:00 – 12:30 **SESSION 3: Metabolic Flexibility**

Chairs: Fatima Baltazar (UMinho) & Valentina Audrito (UniPO)

11:00 – 11:30 **Sarah-Maria Fendt (VIB-KUL):
Metabolic rewiring driving metastasis formation**

11:30 – 12:45 Selected Talks (12'+3'):

1. Mohamed Elgendy: “Understanding bioenergetic plasticity of cancer cells for effectively targeting tumor metabolism”
Institute of Clinical Chemistry and Laboratory Medicine, University Hospital Carl Gustav Dresden, Dresden, Germany

2. Carlos Sebastian: “Metabolic heterogeneity as a driver of stem cell fate and tumorigenesis”
University of Barcelona, Department of Cell Biology, Physiology and Immunology, Barcelona, Spain

3. Patrizia Romani: "Mitochondrial fission links ECM mechanotransduction to metabolic redox homeostasis and metastatic chemotherapy resistance"
Università di Bologna, Dipartimento di Medicina Molecolare, Italy

4. Nicole Kiweler: “Mitochondria preserve an autarkic one-carbon cycle to confer growth-independent cancer cell migration and metastasis”
Cancer Metabolism Group, Luxembourg Institute of Health, Luxembourg, Luxembourg

5. Marine Blackman: “A mitochondrial resident protein is responsible for brain-specific metastasis in human triple negative breast cancer”
UCLouvain, FATH, Brussels, Belgium

13:00 – 14:00 *Lunch and Poster Session*

14:00 – 16:00 **SESSION 4: Metabolism and Microenvironment**

Chairs: Alessandro Carrer (UniPD) & Marie-Julie Nokin (ULiège)

14:00 – 14:30 **Paola Chiarugi (University of Florence):
Lactate-driven metabolic and epigenetic prostate tumor-stroma crosstalk**



14:30 – 16:00

Selected Talks (12'+3'):

1. Ferdinando Chiaradonna: “The HBP inhibitor FR054 synergizes with gemcitabine inducing in vitro and in vivo pancreatic cancer regression by enhancing DNA damage“

University of Milano Bicocca, Dept of Biotechnology and Biosciences, Milano, Italy

2. Donatella delle Cave: "Unraveling the role of epithelial cancer cell-derived collagen in PDAC tumorigenicity and chemoresistance"

Consiglio Nazionale delle Ricerche, Institute of Genetics and Biophysics Adriano Buzzati-Traverso (IGB-ABT), Napoli, Italy

3. Promega (Sponsored)

4. Claudio Laquatra: “Dissecting the TRAP1-dependent regulation of glutamine metabolism in melanoma”

University of Padova, Department of Biomedical Sciences, Padova, Italy

5. Martina Chiu: “A metabolic crosstalk between multiple myeloma cells and mesenchymal stromal cells supports malignant growth”

Università di Parma, Dipartimento di Medicina e Chirurgia, Parma, Italy

6. EURO-BIOIMAGING Platform

16:00 – 16:35

Coffee Break

16:30 – 18:00

SESSION 5: Immunometabolism

Chairs: Max Mazzone (VIB-KUL) & Lefevre Camille (UCLouvain)

16:30 – 17:00

Mathias Wenes (University of Lausanne):
Metabolic interventions to improve CAR T cell efficacy

17:00 – 18:00

Selected Talks (12'+3'):

1. Valentina Audrito: “NAMPT as a therapeutic target in melanoma: linking NAMPT-dependent metabolic reprogramming and immune regulation”.

Università del Piemonte Orientale, Dipartimento Scienze e Innovazione Tecnologica, Alessandria, Italy

2. Georgia Konstantinidou: “Targeting mutant KRAS-driven lipid metabolic deregulation for cancer therapy”

Institute of Pharmacology, University of Bern, Bern, Switzerland



3. Mariam Fokra: "Glycine decarboxylase maintains mitochondrial protein lipoylation to support tumor growth"
Technion – Israel Institute of Technology, Faculty of Biology, Haifa, Israel

4. Marie-Luce Vignais: "Mesenchymal stem cell-derived mitochondria confer chemoresistance to glioblastoma stem cells through metabolic reprogramming"
IGF, INSERM, CNRS, Montpellier, France

18:00 – 19:00 Poster Session

Friday 1 July 2022

9:00 – 10:30

SESSION 6: Metabolism and Oncogenesis

Chairs: Max Mazzone (VIB-KUL) & Margherita Cortini (IOR)

9:00 – 9:50

Arkaiz Carracedo (BIOciGUNE):
Metabolic determinants of prostate cancer aggressiveness

9:50 – 10:30

Micro-Talks & Poster Teaser Talks (4'):

1. Monica de Luise: "Loss of glutaredoxin-2 in inherited oncogenic tumors: understanding protein s-glutathionylation in cancer metabolic reprogramming"

Department of Medical and Surgical Sciences (DIMEC)/Center for Applied Biomedical Research (CRBA), University of Bologna, Bologna, Italy

2. Lavinia Ferrone: "The mitochondrial chaperone TRAP1: a bridge between metabolic rewiring and epigenetic remodeling in DLBCL"
University of Padova, Department of Women's and Children's Health, Padova, Italy

5. Tania Capeloa: "MitoQ prevents human breast cancer metastasis and recurrence in mice"

UCLouvain, FATH, Brussels, Belgium

4. Akeila Bellahcene: "Methylglyoxal stress exerts upstream regulation on DNA methylation to inactivate tumor suppressor genes in triple negative breast cancer"

University of Liège, GIGA Research Institute, Liège, Belgium



5. Francesco de Giorgio: “Endothelial heme dynamics drive cancer cell metabolism by shaping the tumor microenvironment”
University of Turin, Department of Molecular Biotechnology and Health Sciences, Torino, Italy

6. Roxane Crouigneau: “A new microfluidic workflow to study the effects of spatiotemporal gradients in tumor microenvironments”
University of Copenhagen, Department of Biology, Copenhagen, Denmark

10:30 – 11:00 *Coffee Break*

11:00 – 12:45 **SESSION 7: Metabolism and Epigenetic**

Chairs: Giacomo Donati (UniTO) & Marine Blackman (UCLouvain)

11:00 – 11:30 **Bernard Thienpont (KU Leuven):**
DNA methylation and hypoxia - a 2-way interaction

11:30 – 12:30 Selected Talks (12'+3'):

1. Stefano Biffo: “Translational Control of Lipid Metabolism: a Self-Amplifying Loop Necessary for the evolution of liver steatosis to hepatocellular carcinoma”
INGM, MHCG, Milano, Italy

2. Fabio Penna: “NAD⁺ repletion with niacin counteracts cancer cachexia”
University of Torino, Dept. of Clinical and Biological Sciences, Torino, Italy

3. Arnaud Blomme: “tRNA editing-mediated control of redox metabolism unveils new metabolic vulnerabilities in lung cancer”
University of Liège, GIGA-Research Institute, Liège, Belgium

4. Maria J. Rodriguez Colman: “Metabolism meet epigenetics in the regulation of stem cell fate in colorectal cancer”
UMC Utrecht, Center for Molecular Medicine, Utrecht, Netherlands

12:30 – 15:00 *Lunch & Poster Session*

14:00 – 15:00 *ISCaM General Assembly (for ISCaM Members)*

15:00 – 17:00 **SESSION 9: Immunometabolism and Acidosis**

Chairs: Stine Pedersen (UCPN) & Donatella della Cave (IGB-CNR)

15:00 – 15:30 **Massimiliano Mazzone (VIB-KULeuven):**
Harnessing tumor acidosis to overcome immunosuppression



15:30 – 16:30

Selected Talks (12'+3'):

1. Bruna Victorasso Jardim-Perassi: “Targeting acidosis to improve immunotherapy in a pancreatic ductal adenocarcinoma model”
H. Lee Moffitt Cancer Center & Research Institute, Department of Cancer Physiology, Tampa, FL, USA

2. Elisabeth Letellier: “Microbiome-host crosstalk identifies formate as an oncometabolite in colorectal cancer”
University of Luxembourg, Department of Life Sciences and Medicine, Esch-sur-Alzette, Luxembourg

3. Erica Pranzini: “SHMT2-mediated mitochondrial serine metabolism drives 5-FU resistance by fueling nucleotide biosynthesis”
University of Florence, Department of Experimental and Clinical Biomedical Sciences, Florence, Italy

4. Lefevre Camille: “Tumoral acidosis promotes the mobilization of fatty acids by cancer cells via induction of adipose lipolysis”
Louvain Drug Research Institute (LDRI), Université Catholique de Louvain, Brussels, Belgium

5. LucidLab (Sponsored)

from 18:00

Social Dinner and Social Activities



Saturday 2 July 2022

9:00 – 10:45

SESSION 10: Imaging and Acidosis

Chairs: Enzo Terreno (UniTO) & Andrea Morandi (UniFI)

9:00 – 9:30

Dario Longo (Institute of Biostructures and Bioimaging): ***Imaging acidosis: from preclinical to clinical applications***

9:30 – 10:45

Selected Talks (12'+3'):

1. Giuseppe Ferrauto: “Effect of GD-based contrast agents on amide proton transfer -magnetic resonance imaging (APT-MRI): a new tool for investigating water dynamics across cell membrane in tumors”
University of Torino, Department of Molecular Biotechnologies and Health Sciences, Torino, Italy

2. Marie-Julie Nokin: “Targeting oxidative stress-related vulnerabilities in drug resistant BRAF V600E lung adenocarcinoma”
GIGA-Cancer - LBTD, University of Liège, Liège, Belgium

3. Michala Gylling Rolver: “Chronic acidosis rewires cancer cell metabolism through PPAR α signaling”
University of Copenhagen, Department of Biology, Copenhagen, Denmark

4. Alessia Corrado: “A non-invasive multiparametric MRI characterization of tumor microenvironment (acidosis, vascularization and hypoxia) to distinguish between metastatic and non-metastatic murine breast cancer models”
Italian National Research Council (CNR), Institute of Biostructures and Bioimaging, Torino, Italy

5. Chloe Buyse: “Monitoring the effect of anti-cancer drugs on the extracellular pH measurements using magnetic resonance”
UCLouvain, Brussels, Belgium

10:45 – 11:15

Coffee Break

11:15 – 12:15

SESSION 11: Metabolism and Beyond

Chair: Gyorgy Szabadkai (Crick)

11:15 – 12:00

Robert Gillies's Lecture on Acidosis: Pawel Swietach (Oxford University): **Surviving acid**

12:15 – 12:30

Best Poster and Best Talk Prize & Closing Remarks



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