



5th Workshop
SIB group “Tumor Biochemistry”

Is cancer an inaccessible fortress?
Exploiting tumor Achille’s heels
to foster treatment opportunities



UNIVERSITÀ
DI TORINO

Molecular Biotechnology Center (MBC)

Darwin Room

Via Nizza 52

10126 Torino

5th Workshop SIB group “Tumor Biochemistry”

Is cancer an inaccessible fortress?

Exploiting tumor Achille’s heels to foster treatment opportunities

Monday, 9th June

9.00-10.11: Registration of Participants

11.00-11.30: Institutional Greetings

Opening lecture: (Chairs: *Domenica Scumaci, Ferdinando Chiaradonna*)

11.30-12.15: Alberto Bardelli (*IFOM ETS - The AIRC Institute of Molecular Oncology, Milano, Italy; University of Torino, Italy*)

Exploiting immune surveillance to target colorectal cancer

12.15-13.30: Welcome light lunch and poster mounting

Session I – part a: Hit cancer cells to the heart: overcoming organelles and pathway dysfunctions to improve treatments efficacy (Chairs: *Claudia Piccoli, Luigi Leanza*)

13.30-14.00: Sirio Dupont (*University of Padova, Italy*)

A new role for mitochondria as mechano-metabolism signalling hubs

14.00-14.15: Manuela Sollazzo (*University of Bologna, Italy*)

AMPK/mTORC1/autophagy signaling is modulated upon mitochondrial impairment to prevent tumor growth

14.15-14.30: Filippo Severin (*University of Padova, Italy*)

The modulation of the ER-Mitochondria tether grp75 regulates melanoma cancer cell aggressiveness

14.30-14.45: Silvo Conticello (*ISPRO-CNR, Pisa, Italy*)

Extrachromosomal DNA formation through APOBEC deamination

14.45-15.00: Alfonso Scalera (*University of Torino, Italy*)

Muscle iron export as a gatekeeper of cancer metastasis

15.00-15.15: Jessica Ferrigno (*University of Catania, Italy*)

The inflammasome downregulates heme oxygenase 1 expression and drives bone marrow fibrosis in primary myelofibrosis

Session I – part 2: Hit cancer cells to the heart: overcoming organelles and pathway dysfunctions to improve treatments efficacy (Chairs: Joanna Kopecka, Federica Rizzi)

15.15-15.20: Francesco Sposito (*Miltenyi*)

A complete workflow for target identification and deep-diving into the tumor microenvironment

15.20-15.25: Mike Lu (*Lucid*)

Continuous OCR Monitoring: Real-Time Data, Long-Term Insights

15.25-15.30: Giuseppe Mancuso (*Promega*)

Seeing is Believing: visualize rare proteins and cellular events in real time

15.30-15.35: Haidi Ding (*OAE Publishing Inc.*)

Introduction to Biomedical Journals by OAE Publishing Inc.

15.35-16.05: Elisa Giovannetti (*Amsterdam University Medical Centers, The Netherlands*)

Pathway-Informed Strategies to Overcome Pancreatic Cancer Resistance: Integrating (Phospho)Proteomics with Combination Therapy

16.05-16.45: coffee break and poster viewing

Session II: Epigenetics and cancer metabolism: a complex interplay (Chairs: Maria Rosa Ciriolo, Sebastiano Giallongo)

16.45-17.15: Sara Sdelci (*Centre for Genomic Regulation, Barcelona, Spain*)

Chromatome Profiling Uncovers Extensive Nuclear Localization of Metabolic Enzymes

17.15-17.30: Marina La Chimia (*Magna Graecia University of Catanzaro, Italy*)

Exploiting Metabolic-Epigenetic Crosstalk: Phospho-DJ-1 as a Therapeutic Target in BRCA1-Deficient Tumors

17.30-17.45: Fabio Ciccarone (*University of Roma Tor Vergata, Italy*)

Deciphering the role of the DNA hydroxylase TET2 in the resistance of melanoma cells to BRAF inhibitors

17.45-18.00: Chiara Zichittella (*University of Palermo, Italy*)

Epigenetic and metabolic regulation in chemoresistant colorectal cancer cells: The HDAC inhibitor ITF2357 and Inch19

Speed Talk Session (*Chiars: Jenny Karousou, Francesco Bellia*)

18.00-18.45:

Ilaria Cristanini (*University of Verona, Italy*)

Functional analysis of the signal cascade downstream TRAP1 in pancreatic ductal Adenocarcinoma

Marialaura Giannaccari (*University of Pavia, Italy*)

TRPM7 in Breast Cancer: A Functional Insight into Channel-Mediated Tumor Modulation

Salvatore Zarrella (*University of Salerno, Italy*)

Endoplasmic Reticulum Stress and Its Role in Metabolic Reprogramming of Cancer

Alessia Ruzza (*University of Padova, Italy*)

Transglutaminase type 2 (TG2) modulates mitochondrial metabolism to impair breast cancer progression

Irene Fiorilla (*University of Piemonte Orientale, Italy*)

Bi-directional crosstalk between NAD/NAMPT and IFN- γ /PD-L1 axes in melanoma

Gemma Sardelli (*CNR and University of Pisa, Italy*)

Metabolic Adaptation in Chemoresistance: The Role of AKR1B1 in Linking Glucose Metabolism to Drug Resistance in NSCLC

Eleonora Vecchio (*Magna Graecia University of Catanzaro, Italy*)

Overcoming BET-inhibitor JQ1 resistance in aggressive non-small cell lung cancer via BRD2-FTH1 axis by inducing ferroptosis

Michela Patrucco (*University of Milano Bicocca, Italy*)

Brain Metastasis-Derived Nanoparticles: A Novel Strategy for Enhanced CNS Drug Delivery

Marialuisa Piccolo (*University of Napoli Federico II, Italy*)

Innovative lipophilic Ru(III) complex drives cellular lipid peroxidation and ROS accumulation to arouse ferroptosis cascade in triple-negative breast cancer

Giulia Ferrara (*University of Piemonte Orientale, Italy*)

ALDH1A3 as a Therapeutic Target in Brain Metastasis: Development of Selective Gadolinium and Boron Probes

18.45: conclusion of day 1

Social dinner (20.30)

Tuesday, 10th June

Session III: Metabolic vulnerability in cancer cells: how to transform cancer stratagems into therapeutic opportunity (Chairs: Anna Maria Porcelli, Andrea Morandi)

9.00-9.30: Cyril Corbet (*UCLouvain, Institut de Recherche Expérimentale et Clinique, Brussels, Belgium; WEL Research Institute, Wavre, Belgium*)

Targeting microenvironment-metabolism nexus to overcome drug resistance: from mechanisms to anti-tumor therapy

9.30-9.45: Marina Serra (*University of Cagliari, Italy*)

Metabolic Reprogramming and cell autonomous proliferation induced by lead nitrate in normal hepatocytes

9.30-9.45: Silvia Trombetti (*University of Napoli Federico II, Italy*)

SPHK1 knock-down restores apoptosis susceptibility in drug resistant myeloid leukemia cells expressing GATA-1S

9.45-10.00: Aristide Ferrante (*University of Foggia, Italy*)

Featuring circadian metabolism of Cancer Stem and Differentiated Cells to improve cancer therapy

10.00-10.15: Roberta Basile (*University of Piemonte Orientale, Italy*)

Unveiling a Novel Metabolic Vulnerability in Lung Adenocarcinoma: Targeting OADHC for Improved Therapy and Immune Response

10.15-10.30: Eugenia Nicol Manti (*University of Calabria, Italy*)

Targeting Estrogen-Related Receptor Alpha (ERR α) to impair Glutamine Metabolism in Breast Cancer: Enhanced Therapeutic Potential Through Dual Inhibition Strategy

10.30-11: Saverio Tardito (*Center for Cancer Research, Medical University of Vienna, Austria*)

Turning vitamins against tumour metabolism on steroids

11.00-11.30: coffee break and poster viewing

Session IV: Understanding and disrupting the bad liaisons between cancer cells and its microenvironment (Chairs: Laura Patrussi, Paolo Ettore Porporato)

11.30-12.00: Giulia Biffi (*CRUK, University of Cambridge, United Kingdom*)

Roles of fibroblasts in pancreatic cancer metastasis and cachexia

12.00-12.15: Annamaria Antona (*University of Piemonte Orientale, Italy*)

Adipose-derived mesenchymal stem cells drive endometrial cancer progression by establishing pro-tumorigenic metabolic crosstalk with tumor cells

12.15-12.30: Giulia Elizabeth Borsatti (*Sapienza University of Roma, Italy*)

IKK β as a Central Regulator of Inflammatory and Metabolic Pathways in Triple-Negative Breast Cancer Brain Metastasis

12.30-12.45: Elia Angelino (*University of Piemonte Orientale, Italy*)

Impaired cAMP/PKA/CREB1 signaling drives mitochondrial dysfunction in skeletal muscle during cancer-induced cachexia

12.45-14.00: Lunch and poster viewing

Session V: Using the right models and the right tools to beat cancer: mission possible? (*Chairs: Daniela Capello, Giovanni Li Volti*)

14.00-14.30: Antonio Celani (*ICTP Trieste, Italy*)

Artificial Intelligence in life sciences, without the hype

14.30-14.45: Camilla Danisi (*University of Napoli Federico II, Italy*)

Synergistic combination of 5-FU and G-quadruplex ligands overcomes uL3-mediated chemoresistance in vitro and in TCAM model

14.45-15.00: Veronica Pompei (*Polytechnic University of Marche, Italy*)

Treatment of osteosarcoma and Merkel cell carcinoma cell lines with inhibitors of nicotinamide N-methyltransferase: potential for the development of targeted therapeutic strategy

15.00-15.15: Alessandra Fiore (*University of Verona, Italy*)

Bioenergetic reprogramming by mutant p53 promotes ferroptosis resistance in pancreatic cancer

15.15-15.30: Iris Chiara Salaroglio (*University of Torino, Italy*)

Ecteinascidin synthetic analogues: a new class of alkylating agents, exerting immunogenic cell death in refractory malignant pleural mesothelioma

15.30-16.00: Giuseppe Ferrauto (*University of Torino, Italy*)

Tracking Water Cycling in tumors with CEST-MRI

16.00-16.30: Award ceremonies and closing remarks

16.30: Meeting closure