SISTEMA SANITARIO REGIONALE
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IRE ISTITUTO NAZIONALE TUMORI REGINA ELENA
ISG ISTITUTO DERMATOLOGICO SAN GALLICANO
ISTITUTI DI RICOVERO E CURA A CARATTERE SCIENTIFICO

IRCCS REGINA ELENA NATIONAL CANCER INSTITUTE, ROME in collaboration with
CHARITÈ UNIVERSITÄTSMEDIZIN BERLIN

6th WORKSHOP IRE ON TRANSLATIONAL ONCOLOGY

CANCER ORGANOIDS AS RELIABLE DISEASE MODELS TO DRIVE CLINICAL DEVELOPMENT OF NOVEL THERAPIES

ROME, SEPTEMBER 23-24, 2024

IRCCS REGINA ELENA NATIONAL CANCER INSTITUTE

Organizing committee

ANNA BAGNATO, GIOVANNI BLANDINO, FEDERICO CAPPUZZO, GENNARO CILIBERTO, ULRICH KEILHOLZ, PAOLA NISTICÒ, INGEBORG TINHOFER

WORKSHOP OVERVIEW

Modelling the dynamic tumor ecosystems with many elements that display spatial and temporal evolution represents a central challenge in precision oncology. Patient-derived 3D culture models, including organoids, explants, and engineered or bioprinted models, have recently emerged as sophisticated viable systems for studying complex and diverse populations of cancer cells interacting within their microenvironments that can address a myriad of unmet needs in precision medicine for clinical decision making. There has been a recent explosion of techniques and platforms of these human tissue avatars that enable modelling cellular alterations in disease states and screening of compounds and molecules to discover new pathways. This workshop will bring together experts in 3D models from various tissues and will create valuable cross-fertilization of ideas and approaches that will benefit many fields, providing a critical overview at both clinical and preclinical levels. The workshop program will also include engineering approaches that will highlight next generation 3D model technology to recapitulate the complexity of human cancer. An additional aim of this workshop is to evaluate 3D models in the immuno-oncology field as a way to study the interaction of the immune system with epithelial tumors to develop new diagnostic and therapeutic tools. As a result of this meeting, it is anticipated that both senior and junior participants will have a much better understanding of the capabilities of 3D model systems and see new avenues for drug screening exploration.

ORGANIZING COMMITTEE

ANNA BAGNATO
IRCCS Regina Elena National Cancer Institute
Rome, Italy

GIOVANNI BLANDINO
IRCCS Regina Elena National Cancer Institute
Rome, Italy

FEDERICO CAPPUZZO
IRCCS Regina Elena National Cancer Institute
Rome, Italy

GENNARO CILIBERTO
IRCCS Regina Elena National Cancer Institute
Rome, Italy

ULRICH KEILHOLZ
Charité Comprehensive Cancer Center
Berlin, Germany

PAOLA NISTICÒ
IRCCS Regina Elena National Cancer Institute
Rome, Italy

INGEBORG TINHOFER
Charité - Universitätsmedizin Berlin
Berlin, Germany

SECRETARIAT

TANIA MERLINO, CATIA MINUTIELLO, ROBERTO BERNARDI

IRE ISTITUTO NAZIONALE TUMORI REGINA ELENA
ISG ISTITUTO DERMATOLOGICO SAN GALLICANO
ISTITUTI DI RICOVERO E CURA A CARATTERE SCIENTIFICO

via Elio Chianesi 53 - 00144 Rome, Italy
tel. +39 06 52662728
email: **dirscire@ifo.it**

PROGRAMME
MONDAY, 23 SEPTEMBER 2024

13.30-14.00
Welcome Address
Livio De Angelis
CEO Istituti Fisioterapici Ospitalieri
Rome, Italy

Gennaro Ciliberto
Scientific Director
IRCCS Regina Elena National Cancer Institute
Rome, Italy

Ulrich Keilholz
Director Charité Comprehensive Cancer Center
Berlin, Germany

SESSION I
ORGANOIDS IN CANCER MODELING

Chairperson:
Daniela Corda
IEOS National Research Council of Italy - CNR
Naples, Italy

Silvia Soddu
IRCCS Regina Elena National Cancer Institute
Rome, Italy

14.00-14.30
3D-BIOPRINTED CANCER MODELS FOR TARGET DISCOVERY, DRUG DEVELOPMENT, AND PERSONALIZED THERAPY
Ronit Satchi-Fainaro
Cancer Biology Research Center, Tel Aviv University
Tel Aviv, Israel

14.30-15.00
ADVANCES OF PATIENT-DERIVED ORGANOIDS IN PERSONALIZED RADIOTHERAPY
Ingeborg Tinhofer
Charité - Universitätsmedizin Berlin
Berlin, Germany

15.00-15.30
A 3D CULTURE PLATFORM FOR HIGH-THROUGH PUT DRUG SCREENINGS AND MULTIDIMENSIONAL OMICS AND IMAGING ASSAYS ON PATIENT-DERIVED ORGANOIDS
Giovanni Tonon
Vita Salute San Raffaele University, Center for Omics Sciences,
IRCCS San Raffaele Scientific Institute
Milan, Italy

15.30- 16.00 Coffee break

SESSION II
NEXT GENERATION 3D CANCER MODELS

Chairperson:
Anna Bagnato
IRCSS Regina Elena National Cancer Institute
Rome, Italy

Claudio Sette
IRCCS Fondazione Policlinico Agostino Gemelli
Catholic University of the Sacred Hearth
Rome, Italy

AIRC
16.00-16.30
Lecture sponsored by the
Italian Foundation for Cancer Research
ADVANCING TUMOROID MODELS THROUGH BIOPRINTING AND BIOMATERIALS DESIGN
Sarah C. Heilshorn
Stanford University
Stanford, California, USA

16.30-17.00
MODELING AND MODULATING ANTITUMOR IMMUNITY IN HUMAN CANCER TISSUES
Daniela S. Thommen
Division of Molecular Oncology & Immunology
The Netherlands Cancer Institute
Amsterdam,The Netherlands

17.00-17.30
PERSONALIZED FUNCTIONAL PROFILING
Yong-Jun Kwon
Luxembourg Institute of Health
Luxembourgh

17.30-18.00
SUPPORT OF MOLECULAR TUMOR BOARD RECOMMENDATIONS THROUGH INSIGHTS FROM ORGANOIDS
Ulrich Keilholz
Director Charité Comprehensive Cancer Center
Berlin, Germany

TUESDAY, 24 SEPTEMBER 2024

YOUNG INVESTIGATOR SESSION

Chairperson:
Sara Donzelli
IRCCS Regina Elena National Cancer Institute
Rome, Italy

Pasquale Zizza
IRCCS Regina Elena National Cancer Institute
Rome, Italy

09.15-09.27
PRECLINICAL MODELS FOR RARE TUMOURS TO ADVANCE PRECISION ONCOLOGY
Ana Pestana
Charité - Universitätsmedizin Berlin
Berlin, Germany

09.27-09.39
BLADDER-DERIVED TUMOR ORGANOID PLATFORM TO TEST CANCER PRECISION MEDICINE
Carlotta Frascolla
IRCCS Regina Elena National Cancer Institute
Rome, Italy

09.39-09.51
GENETICALLY ENGINEERED LIVER ORGANOIDS AS PRE-CLINICAL MODELS IN INTRAHEPATIC CHOLANGIOCARCINOMA
Luca Pompili
IRCCS Regina Elena National Cancer Institute
Rome, Italy

09.51-10.03
DEVELOPING 3D-PRINTED OSTEOSARCOMA MODELS TO COMPREHENSIVELY CHARACTERIZE MOLECULAR TRAITS AND EVALUATE THE EFFICACY OF NOVEL THERAPEUTIC STRATEGIES
Aurora Puce
IRCCS Regina Elena National Cancer Institute
Rome, Italy

10.03-10.15
CANCER SPHEROIDS AS RELIABLE MODELS FOR DRUG SCREENING: FUNCTIONAL CHARACTERIZATION OF A NEW CLASS OF G-QUADRUPLEX LIGANDS
Sara Iachettini
IRCCS Regina Elena National Cancer Institute
Rome, Italy

10.15-10.27
HMENA-MEDIATED AUTOPHAGY IN THE DIALOGUE AMONG CAFs AND CANCER CELLS IN NSCLC: ORGANOTYPIC TISSUE SLICES AS A PRECLINICAL TOOL
Annalisa Tocci
IRCCS Regina Elena National Cancer Institute
Rome, Italy

10.30-11.00 Coffee Break

11.00-11.12
IDENTIFYING DRUG SENSITIVITY OF MULTIFOCAL PRIMARY PROSTATE CANCER
Sofia Karkampouna
Department for Bio Medical Research
University of Bern
Bern, Switzerland

11.12-11.24
ENHANCED PARP INHIBITOR EFFICACY IN 3D HIGH- GRADE SEROUS OVARIAN CANCER MODELS
Piera Tocci
IRCCS Regina Elena National Cancer Institute
Rome, Italy

11.24-11.36
INTEGRATING SPATIAL TRANSCRIPTOMICS AND ORGANOTYPIC TISSUE SLICES TO UNVEIL THE TUMOR IMMUNE MICROENVIRONMENT IN NON-SMALL CELL LUNG CANCER
Nicla Porciello
IRCCS Regina Elena National Cancer Institute
Rome, Italy

11.36-11.48
AN ORGANOTYPIC 3D MODEL TO STUDY THE HUMAN LIVER FIBROSIS INDUCTION
Klizia Maccaroni
IRCCS Regina Elena National Cancer Institute
Rome, Italy

11.48-12.00
UNRAVELING THE COMPLEXITY OF METASTATIC BREAST CANCER. INSIGHTS FROM ORGANOID CULTURES AND MULTI-OMICS PROFILING
Daniela Rutigliano
IRCCS Regina Elena National Cancer Institute
Rome, Italy

12.00-13.00
MEET THE EDITOR
Gerry Melino
Editor in Chief
Cell Death & Differentiation
Rome, Italy

13.00-14.00 Light lunch

SESSION III

TOWARDS PRECISION ONCOLOGY WITH 3D MODELS

Chairperson:

Federico Cappuzzo
IRCCS Regina Elena National Cancer Institute
Rome, Italy

Maurizio Fanciulli
IRCCS Regina Elena National Cancer Institute
Rome, Italy

14.00-14.30

DRUG SCREENING IN TUMOR ORGANOIDS

Giovanni Blandino
IRCCS Regina Elena National Cancer Institute
Rome, Italy

14.30-15.00

DISSECTING PLASTICITY DURING METASTASIS

Karuna Ganesh
Memorial Sloan Kettering Cancer Center
New York, NY, USA

15.00-15.30

INTEGRATION OF MACHINE LEARNING AND PATIENT- DERIVED ORGANOIDS INSTRUCTS NEXT-GENERATION PRECISION CANCER MEDICINE

Antonio Iavarone
The Sylvester Comprehensive Cancer Center
University of Miami
Miami, Florida, USA

15.30-16.00 Coffee break

SESSION IV

3D MODELS IN IMMUNO-ONCOLOGY

Chairperson:

Paola Nisticò
IRCCS Regina Elena National Cancer Institute
Rome, Italy

Silvia Piconese
Sapienza University of Rome
Rome, Italy

16.00-16.30

CONNECTING TOPOLOGY TO FUNCTION IN THE TUMOR ECOSYSTEM

Massimiliano Pagani
IFOM ETS - The AIRC Institute of Molecular Oncology
Milan, Italy

16.30-17.00

UNCOVERING TREATMENT-DRIVEN CHANGES IN BLADDER CANCER: A COMPREHENSIVE OMICS ANALYSIS

Marianna Kruithof-de Julio
Department for Bio Medical Research - University of Bern
Bern, Switzerland

17.00-17.30

PATIENT-DERIVED MICRO-ORGANOIDS ENABLE PRECISION ONCOLOGY

Xiling Shen
Department of Biomedical Engineering - Pratt School of Engineering
Duke University - Durham, NC, USA

17.30- 18.00

CLOSING REMARKS

Gennaro Ciliberto
Scientific Director
IRCCS Regina Elena National Cancer Institute
Rome, Italy

Ulrich Keilholz
Director Charité Comprehensive Cancer Center
Berlin, Germany

FACULTY

Anna Bagnato
IRCSS Regina Elena National Cancer Institute
Rome, Italy

Giovanni Blandino
IRCCS Regina Elena National Cancer Institute
Rome, Italy

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Rome, Italy

Carlotta Frascolla
IRCCS Regina Elena National Cancer Institute
Rome, Italy

Karuna Ganesh
Memorial Sloan Kettering Cancer Center
New York, NY, USA

Sarah C. Heilshorn
Stanford University
Stanford, California, USA

Sara Iachettini
IRCCS Regina Elena National Cancer Institute
Rome, Italy

Antonio Iavarone
University of Miami
Miami, Florida, USA

Sofia Karkampouna
Department for Bio Medical Research
University of Bern
Bern, Switzerland

Ulrich Keilholz
Charité Comprehensive Cancer Center
Berlin, Germany

Marianna Kruithof-de Julio
University of Bern
Bern, Switzerland

Yong-Jun Kwon
Luxembourg Institute of Health
Luxembourg

Klizia Maccaroni
IRCCS Regina Elena National Cancer Institute
Rome, Italy

Gerry Melino
Cell Death & Differentiation
Rome, Italy

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Tel Aviv, Israel

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Rome, Italy

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Vita Salute San Raffaele University
Center for Omics Sciences
IRCCS San Raffaele Scientific Institute
Milan, Italy

Pasquale Zizza
IRCCS Regina Elena National Cancer Institute
Rome, Italy

GENERAL INFORMATION

VENUE

Regina Elena National Cancer Institute - Centro formazione Bastianelli
via Fermo Ognibene, 23 - Rome

REGISTRATION

Registration is free of charge. Please complete the process to register at our site **www.mitcongressi.it**

CME INFORMATION

The event will be accredited by the Italian Ministry of Health.
The CME Provider is Ifo -Istituti Fisioterapici Ospitalieri (ID 1270).
Course ID: 427739.
This CME event will be held in presence (CME - RES).
The scientific sessions will be accredited for ALL THE MEDICAL SPECIALTIES

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- **Register on https://ifo.sailportal.it/**
- **Select the course from the catalogue.**
- **Click on "Access the course".**
- **Participants are required to attend at least 90% of the accredited sessions and the detection of the presence.**
- **At the end of the event, you will receive 2 paper questionnaires (satisfaction and evaluation questionnaire). You will need a score of 75% or higher on the learning assessment questionnaire.**
- **CME Certificate will be available on the Educational Platform in your personal area.**

For any further information please contact dirscire@ifo.it

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Legal Headquarters: viale Carducci 50 - 40125 Bologna
Address: Centro Direzionale Bolomnia via Guelfa 5 - 40138 Bologna
Mobile +39 345 168 5168
Tel. 051.220427 - Fax 051.0822077
segreteria@mitcongressi.it
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