I CONVEGNO NAZIONALE SIOoC
Roma, 4-5 maggio 2023

PROGRAMMA DEI LAVORI

Giovedì 4 maggio 2023

9.00 **Registrazione**

9.15 **Inizio lavori**

Sessione "Sviluppo e validazione di modelli OoC". Chairperson: Valeria Chiono

9.30 Keynote. Gianluca Ciardelli (Politecnico di Torino). *Enabling technologies and regulation framework for pollutants toxicity testing: the roadmap for organ models implementation.*

10.00 Invited. Gabriella Errico (O.S.A.). *Impiego clinico delle biotecnologie innovative "human based"*

10.15 Invited. Vito D'Alessandro (O.S.A.). *Towards the 3Rs and beyond: Organs-on-Chip and their potential for human-relevant research*

10.30 Stefania Parlato (ISS). *A novel tumor-on-a-chip device tracking guided dendritic cell migration through the vascular endothelium upon therapy.*

10.45 Hélia Fernandes (MTTLAB Srl). *Efficacy of Sorafenib treatment in a 3D hepatic cancer model.*

Sessione presentazioni rapid-fire dei poster. Chairperson: Luca Businaro

11.00 – 11.45

Enrico Amedeo Cavarzerani (Università Ca'Foscari Venezia; C.R.O. di Aviano). *Passive microfluidic technology helps drug testing in 3D HGSOC organoids*

Giacomo Cretti (Politecnico di Milano). *Optimization of advanced setups with integrated readouts for evaluation of cardiac toxicity in a heart on chip device*

Elisa Monti (Politecnico di Milano). *Development of a liver-heart Multi Organs-on-Chip platform for drug toxicity studies*

Eleonora De Vitis (CNR-NANOTEC). *Microphysiological systems for the study of neurodegenerative diseases in vitro*

Xenia Paolelli (Università del Salento; CNR-NANOTEC). *Digital Light Processing 3D printing optimization of high aspect ratio structures for rapid prototyping of chips towards biomedical applications*

Giusi Caragnano (Università del Salento). *Realization of an Organ-on-chip for the study of gastrointestinal chronic diseases, carcinogenesis and tumors*

Chiara Coricciati (Università del Salento; CNR-NANOTEC). *Towards physiologically relevant human liver-on-chip as platform for drug screening in metabolic diseases*

Joanna Filippi (Università degli Studi di Roma "Tor Vergata"). *Detection and characterization of circulating tumor cells (CTCs) using an optically-induced dielectrophoresis system*

Eleonora Mello (Università del Salento; CNR-NANOTEC). *Toward a 3D hiPSCs-derived gut-on-chip platform to investigate the intestinal barrier damage*

Maria Elisabetta Federica Palamà (React4Life SpA). *Extracellular vesicles as a next-generation drug delivery platform in a more physiological OOC-based microenvironment.*

Noemi Petese (Università del Salento; CNR-NANOTEC). *Lab on Chip for precision medicine: measuring Sorafenib effectiveness on HCC cell proliferation.*

Alessandra Zanon (EURAC Research). *Transcriptomic profiling of PRKN-mutant neurons differentiated in a 3D alginate hydrogel matrix.*

Desirée Baruffaldi (Politecnico di Torino). *3D bioprinting for skin model tissue engineering.*

11.45 *Coffee break*

Sessione "Modelli joint-on-chip". Chairperson: Marco Rasponi

12.15 Keynote. Andrea Mainardi (University Hospital Basel). *An Osteochondral Joint-on-Chip to reveal the expression signature of mechanically dysregulated chondrocytes subpopulations.*

12.45 Cecilia Palma (Politecnico di Milano). *Exploiting compartmentalization to unravel the contribution of cartilage and synovium to osteoarthritis pathogenesis in a novel joint-on-chip model.*

13.00 Silvia Lopa (IRCCS Ospedale Galeazzi). *A Personalized Joint-on-a-Chip to Screen Biological Treatments for Osteoarthritis.*

13.15 Shima Salehi (IRCCS Ospedale Galeazzi). *Development of a vascularized osteochondral microfluidic model as a drug screening tool for osteoarthritis.*

13.30 *Light lunch*

Sessione generale I. Chairperson: Manuele Gori

14.30 Keynote. Giancarlo Forte (King's College London; FNUSA-ICRC, Brno, Czechia). *In vitro disease models to study pathological mechanosensing.*

15.00 Matteo Mauceri (Università Ca'Foscari Venezia). *Alginate-Collagen bioink optimization for 3D bioprinted ovarian cancer cell lines and organoids*

15.15 Kossivi Jean D'Arc Pacome (Università Ca'Foscari Venezia; C.R.O. di Aviano). *Human mature omental adipocytes used for paclitaxel delivery to ovarian tumor organoids.*

15.30 Chiara Tonda Turo (Politecnico di Torino). *PDAC-on-chip: modeling the stromal and pancreatic cancer cells crosstalk in vitro.*

15.45 Desirée Baruffaldi (Politecnico di Torino). *3D-printed cell culture system as an in vitro platform for non-small cell lung cancer (NSCLC) modelling.*

16.00 *Coffee break*

Sessione "Young Investigators". Chairperson: Enrico Domenico Lemma

16.30 Keynote. Martin Bastmeyer (Karlsruhe Institute of Technology). *Scaffolds to study basic cell biology.*

17.00 Alessandro Cordiale (Politecnico di Milano). *Intestinal epithelium on chip for pharmacological studies*

17.15 Vita Guarino (CNR-IMM). *Novel fully dynamic in vitro model of Human Blood-Brain Barrier (hBBB)-on-chip with a physiologically relevant structure*

17.30 Chiara Vitale (Università degli Studi di Genova). *A Human Multi-Organ and Dynamic in Vitro Model for Simultaneous and More Predictive Toxo-Efficacy Assays*

17.45 Francesco Noto (ISS). *The epigenetic drug Decitabine co-operates with the IL-33/ST2 axis modifying the tumor microenvironment and promoting anti-tumor activities against melanoma*

18.00 **Conclusione giornata**

20.30 *Cena sociale*

Venerdì 5 maggio 2023

Sessione generale II. Chairperson: Alberto Rainer

9.00 Keynote. Pierre-Alexandre Laurent (Cellink). *Bioprinting technologies for organ-on-chip applications*

9.30 Invited. Giorgia Imparato (Università degli Studi di Napoli Federico II). *3D histological competent human tissues in vitro for reliable OoC devices.*

9.45 Sara Micheli (Università degli Studi di Padova). *Micro-channels array by two photon lithography for cells migration studies*

Sessione presentazioni rapid-fire dei poster. Chairperson: Luca Businaro

10.00 – 10.45

Elisa Sciurti (CNR-IMM). *Copper ions monitoring in cell culture media via anodic stripping voltammetry: from Transwell® to organ-on-chip.*

Lorenzo Pietro Coppadoro (Politecnico di Milano). *Development and validation of a novel MPS platform, towards the standardization and adoption of 3D, dynamic in vitro models, replicating tissue barrier functions and physiology.*

Ilaria Gisone (CNR). *Co-culture of hiPSC-CMs and ECs to mimic cardiac tissue.*

Cristina Degrassi (MTTLAB Srl). *Design of a bioprinted microfluidic chip as a tumor liver model for drug screening.*

Sara Vitale (ISS). *3D in vitro models for advanced colorectal cancer.*

Valentina Peluzzi (Univ. Campus Bio-Medico di Roma). *Kinetic detection of apoptosis events via caspase 3/7 activation in a tumor-immune microenvironment on a chip.*

Flavia Bonalumi (Univ. degli Studi di Parma). *Human Embryonal stem cell-derived cardioids as a model to study the effect of air pollution on developing heart.*

Enrico Domenico Lemma (Univ. Campus Bio-Medico di Roma). *Selective positioning of different cell types on 3D scaffolds via DNA hybridization.*

Giuseppe D'Avenio (ISS). *Regulatory issues of Organs-on-chip.*

Alessia Foscarini (CNR-NANOTEC). *Innovative on-chip technologies for cell biology.*

Elena Bianchi (Politecnico di Milano). *Cellular mechanotransduction modelling on micropatterned PDMS substrates.*

Mirko Hu (Univ. degli Studi di Parma). *Digital Twin of a hESC-derived cardioids-on-a-chip bioreactor.*

Sebastiano Vaccarella (IRCCS Regina Elena). *Patient-derived endometrial cancer organoids reveal molecular and genomic features of primary tumors.*

Carlotta Frascolla (IRCCS Regina Elena). *Bladder cancer organoids: a new frontier for personalized therapy.*

10.45 *Coffee break*

Sessione industriale "Dalla ricerca al mercato". Chairperson: Paola Occhetta

11.15 Keynote. Monica Piergiovanni (JRC). *Enhancing the scientific credibility of OoC: standards towards regulatory acceptance.*

11.45 Keynote. Gessica Marchini (Chiesi SpA). *Human microphysiological system for modeling lung disease.*

12.15 Keynote. Valentina Fioroni (APRE). *The European Innovation Council: financial opportunities to support breakthrough technologies and gamechanging innovations*

12.45 Keynote. Maurizio Aiello (React4Life SpA). *From Academia to Industry, how to start a biotech startup"*

13.15 *Light lunch*

Sessione "OoC & digital twins". Chairperson: Lucia Napione, Francesca Frascella

14.15 Keynote. Manuela Teresa Raimondi (Politecnico di Milano). *Frontier platforms for experimental cell modelling.*

14.45 Michele D'Orazio (Univ. degli Studi di Roma "Tor Vergata"). *A novel platform for robust deep learning management of time-lapse videos in lab-on-chip experiments.*

15.00 Gabriella Bretti (CNR-IAC). *Parameter estimation of a chemotaxis model as forecasting tool for the dynamics in Cancer-on-Chip experiment.*

15.15 **Tavola rotonda "Sinergie con le iniziative 3R"**. Moderatore: Michela Moretti

Intervengono: Arti Devi Ahluwalia (Centro 3R), Gabriella Errico (O.S.A.), Isabella De Angelis (IPAM), Roberto Natalini (CNR-IAC), Giuseppe Gigli (CNR-NANOTEC).

16.30 **Premiazioni e chiusura dei lavori**

17.30 **Assemblea dei Soci SIOoC**