

SCIENTIFIC PROGRAM

CENTRO 3R IV ANNUAL MEETING

The role of 3Rs in the
age of One Health:
*where we are and
where we're going.*

September 13-15, 2023

Università degli Studi di Milano-Bicocca
U6 Building-Agorà, Piazza Dell'Ateneo Nuovo 1—Milan





Welcome to Centro 3R IV annual meeting

The role of 3Rs in the age of One Health: *where we are and where we're going*

The meeting gathers top experts in the fields of 3Rs, namely

REDUCTION: reduction in the number of animals used for a specific study

REFINEMENT: improvement of experimental design to reduce stress and suffering to animals

REPLACEMENT: replacement (even partial) of animal testing with alternative methods of comparable validity.

3Rs summarize the ethical principles that researchers should respect when they undertake animal experiments.

As well anticipated by the Meeting's title, **The role of 3Rs in the age of One Health: where we are and where we're going**, the meeting, bringing together several scientists who are applying the 3Rs' principles, would like to give an insight into the present-day situation and propose new ideas to move towards the future of the 3Rs. To this end the meeting will have several topics covering different aspects of the 3Rs' thinking:

- 3Rs' implementation in cosmetics and drugs R&D;
- synthesis and use of biomaterials and/or engineered tissues to reduce or avoid animal models;
- use of bioreactors and microfluidic devices to improve *in vitro* studies;
- new methodologies for safe and sustainable chemicals and (nano)materials synthesis;
- new alternatives for *in vivo* validation including 3D cell cultures, or organoids and other robust alternative animal models;
- refinements methods, such as *in silico* and statistical approaches, that can help researcher in reducing animal number with the aim to improve experimental design and significantly help to reduce the actual severity of specific scientific procedures and models.

Furthermore, the meeting wants to introduce the participants to the Italian and European 3Rs' normative as well as how teaching may further increase 3Rs' future.

We expect that participants could share novel ideas, novel data, discoveries, and future perspective by oral and poster presentations, emphasizing the great opportunity offered by 3Rs application.

University of Milano-Bicocca



A 25-year history

It was on 10 June 1998 that a Ministerial Decree founded what was initially known as the “Seconda Università degli Studi di Milano”. Later, the Steering Committee asked Professors Brondoni and De Lillo to propose a number of alternative names for the university. The names suggested were then circulated to the entire teaching, technical and administrative staff of the university by way of a questionnaire. The name chosen through the survey was “**Università degli Studi di Milano - Bicocca**”, subsequently ratified by Ministerial Decree No.92 of 12 March 1999.

In 1998, the premises of the old Pirelli factory were turned into a state-of-the-art complex encompassing modern research laboratories, expansive study areas and communal areas for students. Since then, the campus quickly added more classrooms, laboratories and residences, becoming an integral part of the area and taking on a key role in the post-industrial transformation of the district. Today the university campus is unique to Italy, with 28 buildings spread across Milan, Monza and the Maldives.

Over the past 25 years, the university’s innovation in the field of research has benefited from significant infrastructural investment and the consolidation of its position in the ANVUR’s VQR report on the quality of research, which rates Bicocca among the top ten universities in Italy.

The logo

The university wanted to convey the concept of knowledge in Milan via a symbol that was recognisable, undisputed and international - qualities shared by both knowledge and Milan.



This was the thinking behind the choice of Leonardo, the genius who lived and worked in Milan and encapsulates science, art and technical knowledge. Taken from *De Divina Proportione*, a book on mathematics and geometry released in 1498 by Leonardo and the mathematician Luca Pacioli, the octahedron was chosen to represent the multitude of disciplines that coexist at Bicocca. The intermediary lines were removed from Leonardo’s design, which was inserted within a grid to showcase the geometric shape. A simplified octahedron appears again in the background, breaking up the static nature of the design and conveying a sense of change. The design is surrounded by text spelling out the name of the university. When shown in a size larger than 30 centimeters, the text “AUDENTES FORTUNA IU VAT” is added to the bottom of the logo.

Organizing Committee

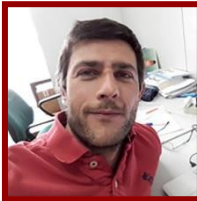
School of Medicine and Surgery

Department of Earth and Environmental Sciences

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MANTECCA



DAVIDE
BALLABIO



ROSSELLA
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Department of Biotechnology and Biosciences

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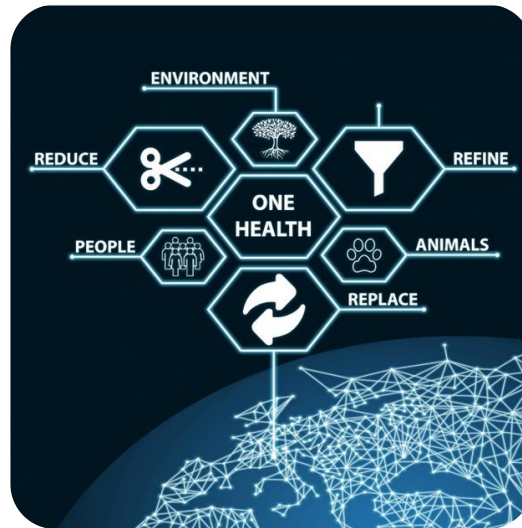
VIRGINIA
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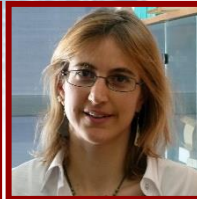
GIUSEPPE
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PANZERI



LAURA
D'ALFONSO



Department of Physics "Giuseppe Occhialini"

Scientific Committee

ARTI AHLUWALIA

Research Center E. Piaggio,
 Università di Pisa
 Director of Centro 3R Italia



GIULIO SANCINI

School of Medicine and
 Surgery
 Università degli Studi di
 Milano-Bicocca



MONICA MATTIOLI BELMONTE

Faculty of Medicine and
 Surgery
 Università Politecnica delle
 Marche



SONIA SCARFÌ

Department of Earth,
 Environmental and Life
 Sciences
 Università degli Studi di
 Genova



VALERIA CHIONO

Department of Mechanical
 and Aerospace Engineering
 Politecnico di Torino



LAURA SIRONI

Department of Physics
 "Giuseppe Occhialini"
 Università degli Studi di
 Milano-Bicocca



SARA MANTERO

Department of Chemistry,
 Materials and Chemical
 Engineering "Giulio Natta"
 Politecnico di Milano



CHIARA URANI

Department of Earth and
 Environmental Sciences
 Università degli Studi di
 Milano-Bicocca



ALBERTO RAINER

Università Campus Biomedico Roma



LIVIA VISAI

Department of Molecular
 Medicine (DMM)
 Centre for Health
 Technologies (CHT), UdR
 INSTM - University of
 Pavia, Italy



MARCELLA ROCCHETTI

Department of Biotechnology
 and Biosciences
 Università degli Studi di
 Milano-Bicocca



Invited Speakers

ANNA MARIA BASSI



Contract Professor at the Department of Experimental Medicine, School of Medical and Pharmaceutical Sciences, University of Genoa
Laboratory of Physiopathology Analysis and Research (LARF) - Dept. Experimental Medicine (DIMES)- Pathology Sect., University of Genova
Centro 3 R *ad honorem* member

VALENTINA CALDERAI



Department of Law
University of Pisa

MARIE CARRIERE



Commissariat à l'Énergie Atomique et aux Énergies Alternatives, CEA, France

SANDRA COECKE



Multi-stakeholder Horizontal Team Leader Farm to Fork
Methods and Models for One Health, European Commission
Directorate General Joint Research Centre
Directorate F – Health and Food - JRC.F.7 Digital Health, Ispra (VA), Italy

MADDALENA COLLINI



Department of Physics "Giuseppe Occhialini"
Università degli Studi di Milano-Bicocca

IRINI FURXHI



Transgero Ltd, Ireland

VERONICA KRENN



Human Technopole Early Career Fellow , University of Milan-Bicocca, Dept. Biotechnology and Bioscience

IRANTZU GARMENDIA AGUIRRE



European Commission, Directorate General Joint Research Centre, Directorate F – Health and Food, Unit F.2 – Technologies for Health

ANGELO GAZZANO



Department of Veterinary Science University of Pisa

MAURIZIO GUALTIERI



Department Of Earth And Environmental Sciences
University of Milano-Bicocca

ANNEMARIE LANG



Department of Orthopaedic Surgery, University of Pennsylvania, PA, USA
Centre for Translational Bone, Joint and Soft Tissue Research, Faculty of
Medicine Carl Gustav Carus, TU Dresden, Dresden, Germany

PAOLO NETTI



Department of Chemical, Materials, and Industrial Production Engineering,
University of Naples Federico II; Center for Advanced Biomaterials for
Healthcare, Istituto Italiano di Tecnologia (IIT@CRIB); Interdisciplinary Research
Center on Biomaterials (CRIB), University of Naples Federico II

URI NEVO



Dep. of Bio-Medical Engineering
ENGINEERING GENERAL
University of Tel Aviv

PAOLO PESCIO



Managing Director - Eurofins Regulatory & Consultancy Services Italy Srl

MANUELA TERESA RAIMONDI



Politecnico di Milano
Dept. of Chemistry, Materials and Chemical Engineering "G. Natta"

MARTA RAYO LUNAR



Scientific and Regulatory Affairs Director
Asphalion, Barcelona (Spain)

GIANLUCA SELVESTREL



Laboratory of Environmental Chemistry and Toxicology, Mario Negri Institute,
Milan, Italy

THOMAS VACCARI



Department of Biosciences (DBS)
University of Milan

SCIENTIFIC PROGRAM

WEDNESDAY 13 SEPTEMBER 2023

From 10.00: Meeting registration opening

12.00-12.15: Welcome address

Giovanna Iannantuoni (Rector of University of Milano-Bicocca)
Organizing Committee

12.15-13.30: Opening Session: INVESTING IN THE 3Rs: FUNDING AND TRAINING

- Guido Angelo Cavaletti, ProRector of Research, University of Milano-Bicocca
- Arti Ahluwalia, Director of Centro 3R Italia
- Vincenzo Ugo Santucci, Director of Office in Charge of Animal Welfare and Animal Experimentation, Italian Ministry of Health
- Silvia Dotti, Head of the National Reference Center for Alternative Methods
- Valeria Albanese and Michela Kuan, LAV (Lega Anti Vivisezione) representatives

13.30-15.15 SESSION 1: COSMETIC AND HEALTH INVESTIGATIONS IN 3R'S TIME

Chairs: Anna Maria Bassi, Sonia Scarfi

13.30-14.00 ANNA MARIA BASSI (Department of Experimental Medicine, University of Genoa; Centro3R *ad honorem* member)

NEW ANIMAL-FREE APPROACH METHODOLOGIES INTO REGULATORY SAFETY ASSESSMENT FOR HAZARDOUS RISK: A LESSON FROM THE BANNING ANIMALS IN COSMETIC TESTING

14.00-15.00 Selected oral communications:

- *Beatrice Masante*: Biomimetic air-liquid interface milli-bioreactor for skin tissue engineering applications
- *Hélia Fernandes*: Production of a Reusable Micromolded Microcavity Insert to Standardize Spheroid Generation for Drug Screening
- *Felice Simeone*: A multi-purpose platform for the assessment of the pro-oxidative potential of silver nanoparticles
- *Maria Grazia Cascone*: Study of radiation effects through an innovative and alternative biodosimetric method based on the use of a plant organism

15.00-15.15 Sponsor Talk, ALTERTOX: Fun with NAMs

15.15-15.45 Coffee Break

15.45-17.30 SESSION 2: BIOMATERIALS AND TISSUE ENGINEERING

Chairs: Alberto Rainer, Giulio Sancini

15.45-16.15 PAOLO NETTI (Center for Advanced Biomaterials for Healthcare, Istituto Italiano di Tecnologia; Interdisciplinary Research Center on Biomaterials, University of Naples Federico II)

ON-CHIP CAPTURING TIME AND SPACE EVOLUTION OF SOLID TUMOUR MICROENVIRONMENT TO ASSESS CANCER STAGE AND PROGRESSION

16.15-17.15 Selected oral communications:

- *Elena Marcello*: Alginate dialdehyde-gelatin bioinks exploiting internal gelation mechanism for cardiac tissue engineering
- *Dafne Barozzi*: Dynamic 3D culture promotes lymphoid tissue maturation and allows the study of Chronic Lymphocytic Leukemia cells dissemination *in vitro*
- *Paolo Signorello*: Design and fabrication of an intestinal phantom
- *Mattia Spedicati*: *In vitro* model of the human esophageal epithelium by tissue engineering tools

17.15-17.30 Sponsor Talk, *CYTOSENS*: New technologies for Cellular characterization: from cell culture to analysis

17.30-18.30: Welcome drink

THURSDAY 14 SEPTEMBER 2023

9.00-10.30 SESSION 3: 3RS IN SEVERAL PERSPECTIVES

Chairs: *Arti Ahluwalia, Gabriella Nicolini*,

09.00-09.30 **SANDRA COECKE** (European Commission, Joint Research Centre, Ispra)
KNOWLEDGE FROM HUMAN CELL-BASED METHODS FOR BETTER PREPAREDNESS AND RESPONSE TO COVID-19 HEALTH THREATS (BREATH)

09.30-10.00 **VALENTINA CALDERAI** (Department of Law, University of Pisa)
NEW PERSPECTIVES ON REPLACEMENT. A CRITICAL REVIEW OF THE ITALIAN LEGAL FRAMEWORK ON HUMAN BRAIN TISSUES RESEARCH AND BIOBANKING

10.00-10.30 **ANNEMARIE LANG** (Department of Orthopaedic Surgery, University of Pennsylvania, USA; Centre for Translational Bone, Joint and Soft Tissue Research, Dresden, Germany)
THE RETHINK 3R CONCEPT - EDUCATING THE NEXT GENERATION OF 3R-AWARE SCIENTISTS

10.30-11.00 Coffee Break

11.00-12.30 SESSION 4: BIOREACTORS and MICROFLUIDIC DEVICES

Chairs: *Valeria Chiono, Sara Mantero*

11.00-11.30 **MANUELA TERESA RAIMONDI** (Department of Chemistry, Materials and Chemical Engineering "G. Natta", Politecnico di Milano)
CELL MODELING IN THE 3R DIMENSION

11.30-12.15 Selected oral communications:

- *Laura Calvillo*: Global 3R approach and bioreactors in biomedical research
- *Nicole Guazzelli*: Acinus-on-a-chip microfluidic device with 3d spherical air-liquid interfaces
- *Camilla Cerutti*: Microfluidic 2D and 3D human organ-specific vasculature models to study circulating cancer cell adhesion in metastasis formation

12.15-12.30 Sponsor Talk, *BIO3DPRINTING*: Electrosider: a novel bioprinting ecosystem for biofabrication scale-up of tissues and organs

12.30-14.00 Lunch and POSTER SESSION I

During lunchtime:

TATABOX CHALLENGE

→ *sign up and test yourself!*

<https://forms.gle/mjn2e7AUzn8o13CPA>



14.00-15.30 SESSION 5: NEW ALTERNATIVES FOR *IN VIVO* VALIDATION, Supporting Project H2020-In2Sight

Chair: *Giberto Chirico, Luisa Fiandra*

14.00-14.20 MARTA RAYO LUNAR (Asphalion, Barcellona,E)
REGULATORY ASPECTS OF 3Rs

14.20-14.40 URI NEVO (Department of Physics, University of Tel Aviv - TAU)
TOWARDS *IN SILICO* PLATFORMS FOR VALIDATION OF BIOMATERIALS

14.40-15.00 MADDALENA COLLINI (Department of Physics "Giuseppe Occhialini" University of Milano-Bicocca)
IMPLANTABLE MICRODEVICES AS POSSIBLE TOOLS FOR NEW VALIDATION PROTOCOL OF BIOMATERIAL

15.00-15.20 PAOLO PESCIO (Eurofins Italia; UNI, Ente Nazionale di Normazione)
STANDARDISATION FOR BIOCOMPATIBILITY: WHERE WE ARE IN ISO 10993, EUROFINS, UNI

15.20-15.35 Sponsor Talk, *NIKON*: Microscopy and 3R: Nikon's solutions for deep imaging and multimodal acquisition

15.35-16.05 Coffee Break

16.05-17.35 SESSION 6: NEW APPROACH METHODOLOGIES (NAMS) FOR SAFE AND SUSTAINABLE CHEMICALS AND (NANO)MATERIALS, Supporting Project: H2020-ASINA

Chair: *Irantzu Garmendia Aguirre, Paride Mantecca*

16.05-16.35 IRANTZU GARMENDIA AGUIRRE (European Commission, General Joint Research Centre, Ispra)
SSbD FRAMEWORK AND THE IMPORTANCE OF NAMs IN ITS IMPLEMENTATION

16.35-16.50 IRINI FURXHI (Transgero Ltd, Ireland)
DATA DRIVEN APPLICATIONS FOR THE QUANTITATIVE HAZARD CRITERIA EXTRACTION

16.50-17.05 MARIE CARRIERE (Commissariat à l'Énergie Atomique et aux Énergies Alternatives, CEA, France)
AOPs BASED STRATEGIES FOR SAFETY ASSESSMENT: A CASE STUDY ON SILVER NANOPARTICLES

17.05-17.20 MAURIZIO GUALTIERI (Department of Earth and Environmental Science, University of Milano-Bicocca)
ON AN INNOVATIVE METHODOLOGY TO ASSESS THE *IN VITRO* HAZARD OF NANOMATERIALS ON *IN VITRO* LUNG MODELS

17.20-17.35 Sponsor Talk, *MATTEK*: MatTek, A BICO Company: our challenges in replacement of *in vivo* testing

17.35-18.30: Centro 3R Board meeting

FRIDAY 15 SEPTEMBER 2023

9.00-10.30 **SESSION 7: 3D CELL CULTURES and ORGANOIDS**

Chairs: *Marcella Rocchetti, Chiara Urani*

09.00-09.30 **VERONICA KRENN** (Human Technopole Early Career Laboratory of Developmental Neuroimmunobiology, Department of Biotechnology and Bioscience, University of Milano-Bicocca)
CEREBRAL ORGANOIDS - EMERGING 3D EXPERIMENTAL MODELS FOR NEUROLOGY RESEARCH

09.30-10.30 Selected oral communications:

- *Lorenzo Coppadoro*: A comparative approach to recapitulate intestinal physiological absorption in vitro, using a novel, modular and versatile MicroPhysiological platform
- *Carlotta Mattioda*: Development of green approaches based on solvent-free nanoparticles and *in vitro* models for the management of metastatic melanoma
- *Philipp Paulitschke*: New non-invasive, label-free monitoring approach for 2D and 3D cell culture
- *Andrea Bezze*: *In vitro* Human-relevant Glioblastoma Models as the novel frontier of nanomedicine screening

10.30-10.45 Sponsor Talk, *CYANAGEN*: Cyanagen – DNA/RNA extraction kits to speed up molecular diagnostics

10.45-11.15 **Coffee Break**

11.15-12.45 **SESSION 8: R of REFINEMENT**

Chairs: *Virginia Brancato, Livia Visai*

11.15-11.45 **ANGELO GAZZANO** (Department of Veterinary Science, University of Pisa)
REFINEMENT: HOW, WHEN AND WHY

11.45-12.15 Selected oral communications:

- *Margherita Tassan Mazzocco*: Application of reduction and refinement principles in the evaluation of prodromal markers of Parkinson's disease in a progressive neurotoxic mouse model using multi-tracer PET imaging
- *Giulio Sancini*: The fantastic voyage of solid lipid nanoparticles from the lung to the brain: non-invasive tomographic imaging as a feasible refinement process

12.15-12.30 Sponsor Talk, *REVVITY*: Benefits of non-invasive in vivo imaging strategies

12.30-14.00 **Lunch and POSTER SESSION II**

14.00-15.30 **SESSION 9: IN SILICO APPROACHES**

Chairs: *Davide Ballabio, Cristina Crocamo*

14.00-14.30 **GIANLUCA SELVESTREL** (Laboratory of Environmental Chemistry and Toxicology, Mario Negri Institute, Milan)

IN SILICO MODELS MEETING ONE HEALTH: A COMMUNITY PERSPECTIVE

14.30-15.30 Selected oral communications:

- *Piera Mancini*: Nebuloid: a novel in silico agent-based cell model

- *Edoardo Luca Viganò*: From Data Exploration to Predictive Models: Advanced ML and AI Techniques for Cardiotoxicity Analysis
- *Rachele Fabbri*: A computational platform to assess the metabolic-electrophysiological behaviour of neurons cultured in monolayers
- *Stefano Motta*: Insights from computational studies in drug design and toxicity assessment

15.30-16.00 Coffee Break

16.00-17.30 SESSION 10: ALTERNATIVE ANIMAL MODELS AND iPSCs

Chairs: *Rossella Bengalli, Ferdinando Chiaradonna*

16.00-16.30 **THOMAS VACCARI** (Department of Biosciences, University of Milano)
DROSOPHILA AS AN ANIMAL MODEL FOR BIOMEDICAL RESEARCH

16.30-17.30 Selected oral communications:

- *Cinzia Bragato*: Study of bio-based nanomaterials inflammation potential in a zebrafish embryo model
- *Martina Arici*: Stress-induced premature senescence in hiPSC-derived cardiomyocytes recapitulates aging-induced cardiac remodelling
- *Alessandra Maria Anna Rando*: Development of in vitro intestinal barrier model for predictive pre-clinical evaluations
- *Giada Cattelan*: A novel human iPSC-based co-culture model to study neurocardiac interaction *in vitro*

17.30-18.00 Awards presentation and closing remarks

Talks and Posters will be evaluated by a jury and prizes will be awarded to the 3 best talks and 3 best posters.

Talks:

1. 600 € (grant funded by Humane Society International, Europe)
2. 300 € (grant funded by Humane Society International, Europe)
3. Graphic communication course funded by Science Draw Graphic

Posters:

1. 600 € (grant funded by Humane Society International, Europe)
2. 300 € (grant funded by Humane Society International, Europe)
3. Graphic communication course funded by Science Draw Graphic

REMEMBER: THINK OUT OF THE BOX

The most appealing and engaging presentation (oral or poster) will be awarded by **ALERTOX** with a Hands on Training.

Abstract book and instructions for presenters

The abstracts book of is available online at this [link](#) or by scanning this QR code

Contributions, subject to authorization by the authors, will be published in [Biomedical Science and Engineering](#) (PAGEPress)



Oral communications:

The speakers of the contributions selected as oral communications will have up to 12 minutes of exposure. The slides must be sent to the organizers by the previous evening following the instructions that will be sent directly to the speakers.

Poster sessions

The posters will be exhibited in two sessions:

- Session I - September 14, 2023
- Session II - September 15, 2023

The breakdown in the two sessions is shown below.

The assembly of the posters can take place on the day of the session starting from 8:30 in the morning and the posters must be removed by the end of the congress day. Any uncollected posters will be trashed.

The presenting author must be near his poster from 1 pm to 2 pm for any questions.

Posters on display

Session I - September 14, 2023

1. Comparison between a dynamic millifluidic and a static culture system to study 3D brain tumor co-culture. Teresa Barra
2. Development of an advanced culture system to mimic *in vivo*-like behaviour for vascular tissue engineering. Elia Pederzani
3. High resolution GelMA bioprinting in Carbopol-based supporting bath. Cesare Gabriele Gaglio
4. Acute toxicity and inflammatory effect of asbestos fibres in an *in vitro* model of human gastrointestinal tract. Serena Mirata
5. HDAC inhibitors as antineoplastic and neuroprotective drugs: *in vitro* assessment. Angelica Squarzoni
6. Development of bioreactors for repopulation of porcine liver scaffolds. Maria Stefania Massaro
7. The influence of gut microbiota on bone remodelling and repair: development of an innovative 3D platform. Daniela Lamanna
8. Gelatin Methacryloyl (GelMA) sources and synthesis comparison for 3D bioprinting. Cesare Gabriele Gaglio
9. Preliminary results of evaluating effects of phytoestrogens on the skin according to NGRA. Francesca Rispo
10. Cosmetic application of hydrolized marine collagen on skin models. Giulia De Negri Atanasio
11. Live monitoring of cell aggregation and spheroid morphology through a custom-made milli-fluidic device. Francesco Biagini

12. From *in vivo* to *in vitro* relative potency assays to characterize multicomponent vaccines for low- and middle-income countries: the StrepA vaccine case. Chiara Muzzi
13. Self-assembling nanomicelles as a versatile new nano-formulation. Giovanna Farruggia
14. Exploring the Potential of Aligned Electroconductive Nanofibrous Membranes for Culturing Peripheral Nervous System Cells. Matteo Bortolameazzi
15. Electron microscopy studies of the bio-interactions of novel nanomaterials and *in vitro* models: the contribution of PMiB. Melissa Saibene
16. Evaluation of the biological effects of metal nanoparticles in an *in vitro* lung system at doses representative of environmental concentrations. Giulia Motta
17. Evaluation of the antioxidant power of the different cosmetic formulations. Francesca Tardanico
18. Bioreactor-based investigation platform for unravelling bone mechanotransduction mechanisms: synergic pro-osteogenic effect of direct perfusion and pulsed electromagnetic fields on biomimetic bone tissue models. Stefano Gabetti
19. Inhibition of the hexosamine biosynthesis pathway affects the epithelial-mesenchymal transition in pancreatic ductal adenocarcinoma. Virginia Brancato
20. Development of new eco-sustainable wound dressing based on Rosa canina L. extract encapsulated into nanovesicles and loaded on broom fibres. Concettina Cappadone
22. Ethical Considerations in the Investigation of Ferulic Acid's Therapeutic Effect on Fertility in MSG-induced Testicular Damage. Anil Can
23. Coaxial bioprinting for *in vitro* tumour models. Paola De Stefano
24. 3D bioprinted infected skin model as a platform for drug and therapies screening. Cesare Gabriele Gaglio Simona Villata
25. Glycosignature impact in 3D-bioprinted models of gastrointestinal cancer. Francesca Cadamuro
26. Three-dimensional cultures of endothelial cells and fibroblasts in a microfluidic multi-compartmental device as an alternative to animal models. Elena Raschi
27. Development of personalized preclinical models for drug screening in Chronic Lymphocytic Leukemia using 3D Bioprinting. Marco Cellani
28. Designing 3D bioprinted meniscal scaffold taking inspiration from extracellular matrix (ECM) features. Maddalena Bracchi
31. The prolonged effects of Russian Chrysotile on an *in vitro* 3D human lung epithelial tissue. Vanessa Almonti
35. Generation of retinal organoids from human induced pluripotent stem cells (hiPSCs). Sara Tirendi

Session II - September 15, 2023

29. InExpose and vivoFlow system: advances in Refinement and Reduction. Sara Di Girolamo
30. 3D glioblastoma *in vitro* models to identify the impact of ECM in tumor progression. Federica Barbugian
32. Novel three-dimensional *in vitro* models of endometriosis. Cristina Volpini

33. *In vitro* functional characterization of iNeurons Parkinson phenotype. Andrea Andolfi
34. AP: advanced cellular models for studying individual sleep dynamics. Sonia Cerchio
36. Genetic Algorithms for the identification and design of physiologically relevant 3D constructs. Flavio Fontana
37. Osteosarcoma: from 2D to 3D model to study natural-like chalcones with antitumor activity. Martina Rossi
38. Set up of a dry eye model using 3D reconstructed human corneal tissues: a new prospective for medical device testing. Giorgia Bray
39. Down-scaling metabolic dynamics of living communities *in vitro*. Ermes Botte
40. hiPSCs-derived neurons as a model to study developmental neurotoxicity (DNT): focus on *in vitro* neurotransmitter release. Sarah Amato
41. Optimization of tumor spheroids for the study of molecular mechanisms in chemotherapy resistance. Giulia Paties Montagner
42. Glioblastoma giant polyploid stem cells: from genomic profiles to *in vitro* study of new therapeutic strategies. Martina Giambra
43. Investigating zebrafish (*D. rerio*) development and behavior to assess the hazard of antimicrobial CuO nanoparticles. Beatrice Negrini
44. Stromalized microtissue as new model to study histone methylation profile involved in PCa aggressiveness. Giulia Gangarossa
45. Hybrid spheroids as a model of osteosarcoma. Martyna Malgorzata Rydzyk
46. Evaluation of different approaches to produce breast cancer spheroids for *in vitro* drug testing. Nora Bloise
47. Advanced cell culture models for the investigation of the cross talk between triple negative breast cancer cells and activated fibroblasts. Alessandro Colombo
48. Experimentally validated *in silico* methodology for proteome-wide identification of (off-)target proteins and enhanced rational design of animal testing: the case of finasteride. Alessandro Di Domizio
49. Device for 3D cell culture and extensive screening on organoids. Elena Bianchi
50. Antitumor activity of the hydroalcoholic extract of *Artemisia annua* L. in human osteosarcoma: from 2D to 3D models to study antitumor phytocomplexes. Cristina Pellegrino
52. Unveiling stress-free biomarkers in several mouse models via digital ventilated cages (DVC®) technologies. Giorgio Rosati
53. Functionalized liposomes for automated fluorine-18 surface radiolabelling and *in vivo* PET imaging. Rosa Maria Moresco
54. 3R-SMART: Information and training platform for methods to replace and supplement animal experiments. Melissa K. Valussi
55. Unraveling ligand binding to HIF-2 α : computational approaches in drug design and their contribution to promoting 3Rs principles. Lara Callea

The organizers thank the sponsors for their valuable contribution to the realization of the meeting



The meeting is also partly supported by

