

## COST ACTION CA17140: Cancer Nanomedicine: from bench to bedside

### Training school

Preclinical and clinical studies of cancer nanomedicine – state of the art and future perspectives

March 13-14, 2023

Institute of Oncology Research (IOR), Bellinzona, Switzerland

### Course description

The field of nanomedicine has seen substantial progress in the last few years. Many products have reached the market and are under clinical investigation, and many more nanomedicine-based therapeutics are in development and undergoing preclinical evaluation. Nanomedicine may revolutionize cancer treatment, moving it toward the era of precision cancer medicine. Improving methods and approaches for preclinical and clinical investigation is a strategic need for the nanomedicine field, particularly for oncological applications. The 2-day Training School, organized by WG3 and WG4 of the Nano2Clinic COST Action CA17140, will feature presentations and practical sessions on the methodological approaches and technologies available for advanced preclinical and clinical studies of cancer nanomedicines and an overview of the stakeholders in the field at academic and industrial levels. The intent is to allow young scientists to interact with expert researchers and discuss various techniques and applications, from the biological and functional characterization of nanomaterials to anticancer efficacy studies in cell cultures and in vivo models and the planning of early-phase clinical trials.

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## Course program

### Monday, March 13th - Morning sessions: 9:00 - 12:00

**9:00-9:30** - Welcome - Sabrina Pricl

**9:30-10:00** - Introduction: Preclinical research in cancer nanomedicine-Carlo Catapano

**10:00-10:30** - Nanomedicine journey from the lab to the clinic - Enrico Catalano

**10:30-11:00** - Nanomedicine from preclinic to clinical models- Ulf Kahlert

**11:00-11:20** - Tracking of NPs by confocal microscopy - Diego Morone

**11:20-11:40** - TEM applications to nanomedicine - Andrea Raimondi

**12:00-14:00** - Lunch

### Monday, March 13th – Afternoon sessions: 14:00 - 18:00

**14:00-14:20** - Flow cytometry in nanomedicine - Daniela Impellizzieri

**14:20-14:40** - 2D in vitro models and applications in targeted nanomedicine –Flavia Giamogante

**14:40 -15:00** - Patient-derived and mouse-derived and organoids - Elisa Federici

**15:00-15:30** - In vivo models in preclinical nanomedicine - Gianluca Civenni

**15:30-16:30** - Break

**16:30-17:00** - Native extracellular vesicles for cardiovascular therapeutics - Lucio Barile

**17:00-17:30** – Nano medicine delivery: models and technologies - Tambet Teesalu

**17:30-18:00** - General discussion

Tuesday, March 14th - Morning sessions: 9:00 – 12:00

**9:00-9:30** - Nanoparticles design: from chemistry to biology - Francesco Cellesi

**9:30-10:00** - RNAs as drugs and therapeutics - Jonathan. Hall

**10:00-10:30** - Tissues-on-a-chip models - Matteo Moretti

**10:30-11:00** - iPS-derived organoids: methods and applications - Arianna Baggiolini

**11:00-11:30** - Therapeutic antibodies development - Mattia Pedotti

**11:30-12:00** - Laboratories and facilities

**12:00-14:00** – Lunch

Tuesday, March 14th - Afternoon sessions: 14:00-18:00

**14:00-14:30** - Genomic and bioinformatic data in precision nanomedicine - Marco Bolis

**14:30-15:00** - Genomic technologies in nanomedicine - Andrea Rinaldi

**15:00-15:30** - Proteomic technologies in nanomedicine - Matteo Pecoraro

**15:30-16:00** - Break

**16:00-16:30** - Nanomedicine applications: biosensors - Enrico Catalano

**16:30-17:00** - Nanoparticle-based drug delivery: a project description - Valeria Uboldi

**17:00-18:00** - General discussion