



Friday June 16, 2023 | 2.30 PM

Personalized therapy in oncology

Auditorium I Università della Svizzera italiana

Via Giuseppe Buffi 13, 6900 Lugano

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IBSA Foundation Special Forum

17th International Conference on Malignant Lymphoma

Cancer is a **dynamic disease** with a high degree of **heterogeneity** not only at the intra-tumor level but also between patient and patient. The ever more complete characterization of **recurrent DNA** alterations in cancer patients and the discovery of new tumor mechanisms allowed the development of highly precise therapies capable of targeting specific **molecular targets**.

Personalized oncological therapy fits into this complex context where each patient is treated on the basis of the specific molecular characteristics of his tumor.

Molecular target therapies are already a reality: for example, they are used for the treatment of some types of breast cancer, gastrointestinal stromal tumors or chronic myeloid leukemia. These are promising therapies tailored to the **genetic characteristics of the patient**.

The IBSA Foundation Special Forum aims to discuss the latest discoveries and the objectives of personalized oncological medicine with international experts.

Programme

2.30 PM Institutional greetings and introduction

2.40 PM Organoids model human disease

Hans Clevers, MD PhD Professor of Molecular Genetics Utrecht University, Head of Pharma Research and Early Development and Member of the Enlarged Corporate Executive Committee at F. Hoffmann-La Roche Ltd. Basel (Switzerland)

3.20 PM Unconventional approaches to cancer therapy

René Bernards, PHD, Professor of Molecular Carcinogenesis at Netherlands Cancer Institute, Division of Molecular Carcinogenesis. Amsterdam (Netherlands)

4.00 PM Patient-specific models of multicellular oncogenic competence in metastasis

Arianna Baggiolini, Assistant Professor at the Università della Svizzera italiana and Group Leader at the Institute of Oncology Research, Institutes of Science (BIOS+). Bellinzona (Switzerland)

4.15 PM Q&A

4.45 PM Farewell coffee, Parco Ciani

We will provide a digital certificate of attendance on request.

Moderator:

Andrea Alimonti, Prof. Dr. med, Professor of Experimental Oncology at ETH Zurich and at Università della Svizzera Italiana, ERC Investigator, EMBO YIP and Head Molecular Oncology Institute of Oncology Research, member of the Scientific Board of IBSA Foundation (Switzerland).

Speakers and Abstracts

Hans Clevers
Switzerland



Organoids model human disease

Organoids are 3D structures that are established from either pluripotent (iPSC/ES) or adult stem cells and capture key characteristics of the represented organ, in terms of architecture, cell type composition, physiology and pathology. In this seminar, I will discuss the development of adult-stem cell based organoids and will discuss a number of human disease models-in-a-dish that are based on gut, lung, breast and liver organoids.

René Bernards
Netherlands



Unconventional approaches to cancer therapy

Single-agent cancer therapeutics can initially be highly effective, but resistance remains a major challenge. Combining drugs can help avoid resistance, but the number of possible drug combinations vastly exceeds what can be tested clinically, both financially and in terms of patient availability. Rational drug combinations based on a deep understanding of the underlying molecular mechanisms associated with therapy resistance are potentially powerful in the treatment of cancer. In my lecture I will discuss several innovative ways to combine drugs to produce longer-lasting responses in patients. Examples will include synthetic lethal drug combinations, sequential treatment regimen and our very recent approaches to hyperactivate oncogenic signalling in cancer cells as a therapeutic strategy.

Arianna Baggiolini
Switzerland



Patient-specific models of multicellular oncogenic competence in metastasis

Oncogenic competence is related to cell fate and cell state, but those are not only cell-intrinsic processes, as they are greatly regulated by the cell extrinsic factors, as the other cells in the microenvironment, and by systemic hormonal and metabolic influences. Among the possible metastatic sites, the brain is characterized by distinct metabolic conditions and immune environment. Moreover, the brain is composed of unique cell types as neurons and cells of the glia, like astrocytes and microglia. The study of the human brain microenvironment has always been challenging because of the problematic access to human brain samples, arduous cellular isolation, and culture. The human pluripotent stem cells (hPSCs)-based technologies allow us to build patient-specific 3D brain organoids and address how cancer cells adapt to and remodel the human brain niche.