



INSTITUTE
FOR RESEARCH
IN BIOMEDICINE

Barcelona BioMed Conference

CANCER IN CONTEXT: cellular, tissue, and organismal determinants of malignant fates

27- 29 November 2023

Monday, 27 November

8.30 Registration

9.00 Welcome by Dr. Francesc Posas (IRB Barcelona, Director)
and organizers (Dr. Direna Alonso-Curbelo and Dr. Tuomas Tammela)

Session I: From mechanism to phenotype: emerging concepts and technologies
Chair: Dr. Ángela Nieto, Institute of Neurosciences of Alicante- UMH (Elche, Alicante)

9.15 **What makes a cell competent to cause cancer?**
Dr. Richard White, Ludwig Institute for Cancer Research (Oxford, UK)

9.50 **Lessons from the past to predict the future: epigenetic memory in chronic lymphocytic leukemia**
Dr. Iñaki Martin-Subero, IDIBAPS/ICREA (Barcelona, Spain)

10.25 **Short talk 1: In vivo screening of tumor-hepatocyte interactions identifies Plexin B2 as a gatekeeper of liver metastasis**
Costanza Borrelli, ETH Zurich (Basel, Switzerland)

10.40 -11.15 *Coffee break and poster session*

11.15 **Epigenetic influence of fatty acid metabolism on metastasis: consequences on cachexia**
Dr. Salvador Aznar Benitah, IRB Barcelona/ICREA (Barcelona, Spain)

11:50 **Short talk 2: Unraveling the role of cancer-associated small open reading frames using an in vivo CRISPR screen**
Fabiola Valdivia-Francia, Institute For Regenerative Medicine, University of Zurich (Zurich, Switzerland)

12.05 **Short talk 3: Functional Dissection of the Basal Cell State in Pancreatic Cancer**
Dr. Anupriya Singhal, Memorial Sloan Kettering Cancer Center (New York, NY, USA)

12.20 **Investigating tumor evolution and tumor-immune interactions using genetically engineered mouse models of cancer**
Dr. Tyler Jacks, Koch Institute for Integrative Cancer Research at MIT (Cambridge, MA, USA)

12.55 -14.00 *Lunch and poster session*

Session II: Evolutionary trajectories in premalignancy and cancer
Chair: Dr. Eduard Batlle, IRB Barcelona/ICREA (Barcelona, Spain)

14.00 **Somatic mutation landscapes in large human cohorts**
Dr. Iñigo Martincorena, Wellcome Sanger Institute (Cambridge, UK)

14.35 **Neoplastic co-option of cell and tissue plasticity in pancreatic tumorigenesis**
Dr. Direna Alonso-Curbelo, IRB Barcelona (Barcelona, Spain)

15.10 **Evolutionary trajectories from premalignancy to cancer: lessons from the oesophagus**
Dr. Rebecca C. Fitzgerald, University of Cambridge (Cambridge, UK)

15.45 - 16.15 *Coffee break and poster session*

16.15 **Life history of breast cancer and related clones**
Dr. Seishi Ogawa, Kyoto University (Kyoto, Japan)

16.50 **Panel Discussion/Colloquium: Placing cancer in context in the AI era**
Panelists: Núria López-Bigas, Christina Curtis, Ido Amit, Logan Walsh
Moderators: Tuomas Tammela, Direna Alonso-Curbelo

17.45 *End of session*

Tuesday, 28 November

Session III: Cellular origins and hallmarks of neoplastic identity

Chair: Dr. Dìrena Alonso-Curbelo, IRB Barcelona (Barcelona, Spain)

- 9.00 **Altering chromatin accessibility - implications for development and tumorigenesis**
Dr. Alexandra Avgustinova, IRB Barcelona/ Institut de Recerca Sant Joan de D eu (Barcelona, Spain)
- 9.35 **Stem cells, immune evasion and metastasis in colorectal cancer**
Dr. Eduard Batlle, IRB Barcelona/ICREA (Barcelona, Spain)

10.10 -10.40 *Coffee break and poster session*

- 10:40 **Impact of aging on lung plasticity and tumorigenesis**
Dr. Tuomas Tammela, Memorial Sloan Kettering Cancer Center (New York, NY, USA)
- 11.15 **Short talk 4: Development and cancer: regulatory elements in pancreatic cancer onset**
Dr. Luis Arnes, University of Copenhagen (Copenhagen, Denmark)
- 11.30 **Short talk 5: Pdgfra-expressing stroma responds promptly to intestinal epithelial overgrowth**
Dr. Elisa Manieri, Dana-Farber Cancer Institute (Boston, USA)
- 11.45 **EMT and cell plasticity trajectories in cancer progression**
Dr.  ngela Nieto, Institute of Neurosciences of Alicante- UMH (Elche, Alicante)

12:20-13.20 *Lunch and poster session*

Session IV: Crosstalk within normal and malignant ecosystems

Chair: Dr. N ria L pez-Bigas, IRB Barcelona/ ICREA (Barcelona, Spain)

- 13.20 **Resolving site-specific immune barriers to metastasis**
Dr. Ana Luisa Correia, Champalimaud Foundation (Lisboa, Portugal)
- 13.55 **Single-cell spatial landscapes of the lung and brain tumour immune microenvironment**
Dr. Logan Walsh, McGill University (Montreal, Quebec, Canada)
- 14.30 **Short talk 6: Spatial differences in the molecular organisation of tumours along the proximal-to-distal axis of the colon are linked to interactions within the tumour ecosystem**
Dr. Martin H. Schaefer, European Institute of Oncology (Milano, Italy)

- 14.45 **Organoid cellular cancer immunity models in motion**
Dr. Anne Rios, Princess Máxima Center for Pediatric Oncology (Utrecht, The Netherlands)
- 15.20- 16.00 *Coffee break and poster session*
- 16.00 **Malignant networks in brain tumors (and how to disconnect them)**
Dr. Frank Winkler, DKFZ Heidelberg (Heidelberg, Germany)
- 16:35 **Short talk 7: An interactive cellular ecosystem blocks epithelial transformation in naked mole-rat**
Dr. Mikaela Behm, DKFZ Heidelberg (Heidelberg, Germany)
- 16.50 **A senescent tumour microenvironment promotes lung cancer initiation and progression**
Dr. Daniel Munoz-Espin, Early Cancer Institute, University of Cambridge (Cambridge, UK)
- 17.25 **The power of ONE: Immunology in the age of single cell genomics**
Dr. Ido Amit, Weizmann Institute of Science (Rehovot, Israel)
- 18.00 *End of session*
- 20.30 *Speakers dinner (Restaurant Can Pineda) (Sant Joan de Malta, 55)*

Wednesday, 29 November

Session V: Challenges and opportunities for clinical translation

Chair: Dr. Alexandra Avgustinova, IRB Barcelona/ Institut de Recerca Sant Joan de Déu (Bcn, Spain)

- 9.00 **Genetic and non-genetic features of tumor immunity: mismatch repair deficiency as a model system**
Dr. Luis Diaz, Memorial Sloan Kettering Cancer Center (New York, NY, USA)
- 9.35 **Short talk 8: Genome-wide CRISPR screens identify novel co-dependencies with KRAS inhibition**
Bettina Sajtos, Research Institute of Molecular Pathology (Vienna, Austria)
- 9.50 **Short talk 9: Methylation of the epigenetic regulator KMT2D by SMYD2 contributes to therapeutic response in hormone-dependent breast cancer**
Dr. Enea Toska, Johns Hopkins University School of Medicine (Baltimore, Maryland, USA)
- 10.05 **Clonal selection in normal tissues and its relation to cancer risk**
Dr. Núria López-Bigas, IRB Barcelona/ ICREA (Barcelona, Spain)

10.40 -11.20 *Coffee break and poster session*

11.20 **Exploring evolutionary contingencies and constraints by rewinding the tape of malignant transformation**

Dr. Samra Turajlic, The Francis Crick Institute (London, UK)

11.55 **Short talk 10: Origin of second malignancies in pediatric patients**

Dr. Mònica Sánchez-Guixé, IRB Barcelona (Barcelona, Spain)

12.10 **Short talk 11: Epithelioids: Self-sustaining long-term 3D cultures reveal drivers of clonal expansion in esophageal epithelium**

Dr. Albert Herms, Universitat de Barcelona, Barcelona, Spain

12.25 **Genomic, host and microenvironmental determinants of cancer progression**

Dr. Christina Curtis, Stanford University School of Medicine (Stanford, CA, USA)

13.00 *Concluding remarks and end of conference*