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## [SORS: Tissue and subnuclear neighborhoods uncovered by high-resolution, multiplexed protein imaging](#)

### Abstract

A set of imaging technologies that profile tens to hundreds of antibodies at subcellular resolution have recently emerged to characterize single cells in their native tissue environment. One of such technologies, Multiplex Ion Beam Imaging (MIBI), harnesses a high energy ion beam to eject the atomic components of samples and a time-of-flight mass spectrometer to reconstruct their spatial positions. In this presentation, I will delve into three innovations for MIBI: 1) epitope barcoding for in situ tracking of cell lineages and phenotypes in tumor models, 2) the use of a high-resolution cesium ion beam to visualize biomolecules and small molecules at the nanometer scale within cancer cells, and 3) its coupling to expansion microscopy, which expands tissues while preserving protein staining, allowing high-plex imaging for detailed analysis of subcellular features in archival clinical tissue samples. By highlighting novel analytical tools and applications for these technical advancements, this talk will exemplify how high-resolution, multiplexed protein imaging is transforming our understanding of tissue and cell biology.



#### Short Bio

Dr. Xavier Rovira Clavé is a junior group leader at the Institute for Bioengineering of Catalonia (IBEC) in Barcelona, where he develops and applies highly multiplexed imaging technologies to study tissue biology in models of cancer and infectious diseases. Dr. Rovira Clavé holds a PhD in Immunology from the University of Barcelona, and he trained in cancer biology as a postdoc in the laboratory of Professor Garry Nolan at Stanford University. Dr. Rovira Clavé has published several articles in renowned scientific journals such as *Cancer Cell*, *Immunity*, *Nature Communications*, and *Cell*, holds 5 patents, and has received a series of awards that include the EMBO postdoctoral fellowship, the LLS Career Development Award, and the ERC Starting Grant.

### Speakers

**Speaker:** Dr. Xavier Rovira Clavé. Junior group leader at the Institute for Bioengineering of Catalonia (IBEC)

**Host:** Eduard Porta. Computational Biology Life Sciences Group, BSC  
Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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