

CAT CAT | Cell & Tissue Research In Catalonia Symposium

December 1st, 2022
CRG Auditorium

9-9:15 Wellcome by Vivek Malhotra

9:15 - 9:45 **Pere Roca-Cusachs** (IBEC)
"Transducing and shielding mechanical force from integrins to the nucleus"

9.45 - 10:15 **Talya Dayton** (EMBL Barcelona)
"Using organoids to study the dynamics of neuroendocrine development and cancer"

10:15 - 10:45 **Elvan Böke** (CRG)
"Oocytes maintain ROS-free mitochondrial metabolism by suppressing complex I"

10:45 – 11:15 **Coffee Break**

11:15 – 11:45 **Albert Pol** (IDIBAPS)
"Lipid Droplets and the host-pathogen dynamic: FAtal attraction?"

11:45 – 12:15 **Oriol Gallego** (UPF)
"Towards the structural dynamics that control exocytosis".

12:15 -13:15 **Michael N. Hall** *keynote talk*
(Biozentrum of the University of Basel)
"mTOR signaling in growth and metabolism"

Centre for Genomic Regulation
C/ Doctor Aiguader 88
08003 Barcelona

Groups from the following Universities and research institutes join the initiative:



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Michael N. Hall

Biozentrum of the University of Basel
Switzerland



"mTOR signaling in growth and metabolism"

TOR (target of rapamycin) is a highly conserved serine/threonine kinase that controls cell growth and metabolism in response to nutrients, growth factors, and cellular energy. TOR was originally discovered in yeast but is conserved in all eukaryotes including plants, worms, flies, and mammals. TOR is found in two structurally and functionally distinct multiprotein complexes termed TORC1 and TORC2. The two TOR complexes, like TOR itself, are highly conserved. Thus, the two TOR complexes constitute an ancestral signaling network conserved throughout eukaryotic evolution to control the fundamental process of cell growth. As a central controller of cell growth, TOR plays a key role in development and aging, and is implicated in disorders such as cancer, cardiovascular disease, obesity, and diabetes.

While the role of TOR in controlling growth of single cells is relatively well understood, the challenge now is to understand the role of TOR signaling in disease and in coordinating and integrating overall body growth and metabolism in multicellular organisms. This will require elucidating the role of TOR signaling in individual tissues. Data on the role of mammalian TORC1 (mTORC1) and mTORC2 in controlling cellular processes and in specific tissues will be presented.

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