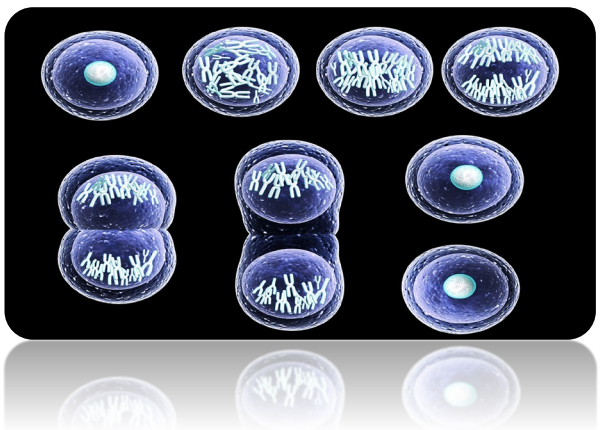
BtBs Seminars

Biotechnology and Biosciences Seminars



Marina Mapelli

European Institute of Oncology

Molecular mechanisms of Wnt-dependent asymmetric cell division

In multicellular organisms, the execution of developmental and homeostatic programs relies on asymmetric cell divisions orchestrated by signals from the niche presented in a directional manner, such as Wnt signals. Here we employ bioengineered Wnt-niches to demonstrate that in metaphase NuMA/dynein microtubule motors form a complex with LRP6 and b-catenin at the cortical sites of Wnt activation to orient cell division perpendicularly. Additionally, we developed a proteomic-based approach to identify mitotic protein complexes enriched at the Wnt-contact site, revealing that mitochondria polarize toward localized Wnt3 sources and in mESC are asymmetrically apportioned to the Wnt-proximal daughter. Our findings elucidate fundamental principles underlying Wnt-dependent mitochondrial polarization.

Thursday
2 October, 2025

4.30 pm
to 5.30 pm

U3-BIOS building
room TBA

Host:
Veronica Krenn

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