Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad – 500 046

Comprehensive Seminar

Unravelling the direct cross-talk between MICOS complex and ATP Synthase

Shreeya Pawan Shah

Mitochondria - “The power house of the cells”, have a plethora of functions other than ATP synthesis, some of which include regulating apoptosis, oxidative phosphorylation, steroid synthesis, calcium regulation, heme synthesis and fatty acid oxidation. Mitochondrial efficiency is linked to intricate structures called cristae, which are the invaginations of the inner membrane. Having the cristae intact is important because in several studies, aberrant cristae morphology is seen as a hallmark of mitochondrial diseases. The key regulators of cristae morphology are the MICOS complex, a megadalton protein complex residing at the cristae junctions, OPA1 and the ATP synthase. Individually, all of these regulators are well studied, but the interplay/crosstalk, is yet to be elucidated. In this seminar, I will talk about the role of MICOS, ATP synthase and their crosstalk in regulating cristae morphology. I will end the discussion by highlighting my key research questions, with the ultimate aim of understanding the interaction between MICOS and ATP synthase using structural studies.

Tuesday, Jun 30th 2026

10:30 Hrs (Tea / Coffee 10:15 Hrs)

Seminar Hall, TIFRH