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

Internal Webinar

dMyc regulates mitochondrial-stress-induced mitochondrial biogenesis (mSIMB)

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Mitochondrial biogenesis requires the expression of proteins encoded by genes in both the nucleus and the mitochondria. Most mitochondrial proteins (~1100), however, are encoded by nuclear genes, with only 13 Electron Transport Chain (ETC) proteins encoded by the mitochondrial genome, requiring highly coordinated expression between nuclear and mitochondrial genome. In this talk, I will describe a forward genetic screen we performed to identify novel regulators of mitochondrial biogenesis. We found that mutations in several Nuclear Encoded Mitochondrial Genes lead to increased mitochondrial biogenesis. We term this phenomenon mitochondrial-stress-induced mitochondrial biogenesis (mSIMB). Further, we uncovered that dMyc, a transcription factor, is required for mSIMB. Finally, I will discuss our plans to identify signaling elements regulating dMyc-mediated mSIMB as well as the physiological relevance of mSIMB activation.

Thursday, Jul 23rd 2026

16:00 Hrs