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

Comprehensive Seminar

Updates on mitochondrial dynamics

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Mitochondria are found in different shapes and sizes in various tissue and physiological conditions. This difference in shape and size is achieved through their coordinated fusion and fission, a process known as mitochondrial dynamics. Dynamic regulation of mitochondrial fission and fusion is crucial for various cellular and physiological processes, e.g., during cell division, mitochondrial fission is required for their segregation into two daughter cells. Mitochondrial fission is also required for the segregation of dysfunctional mitochondria, which then is eliminated by mitophagy. The fission and fusion of mitochondria have also been implicated in cell fate determination, for example, during adipocyte generation from mesenchymal stem cells, mitochondria undergo fusion. Several GTPases, which can modulate mitochondrial fission and fusion have been identified as core machinery of mitochondrial dynamics. Differential regulation of these proteins is required to determine context-specific mitochondrial shape and size. In my talk, I will discuss the state-of-the-art research in the field of mitochondrial dynamics. I will highlight major gaps in our understanding of mitochondrial dynamics and its implications in physiological and disease conditions.

Friday, Sep 20th 2024

14:00 Hrs (Tea / Coffee 13:45 Hrs)

Seminar Hall, TIFR-H