

Comprehensive Seminar

Investigating the molecular details of cristae architecture

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Ever since the mitochondrial ultrastructure was characterised for the first time by George Palade in the 1950s, the architecture of the inner mitochondrial membrane has been an enigma. While the folds of the inner membrane, called the cristae, are central to the functioning of the mitochondria, it is intriguing that very little is known about the molecular details of cristae architecture. It is only over the past decade that several of the vital regulators of the cristae architecture have been identified. However, this is just the tip of the iceberg.

One of the central players in this context is the MICOS complex, a megadalton protein machinery localised specifically to the cristae junctions. While there have been a plethora of cellular studies to identify the components of the MICOS, the exact molecular mechanism by which it modulates the cristae architecture is still an unsolved mystery. Some of these questions can be addressed through structural characterisation of the MICOS complex.

The focus of this seminar will be (1) to highlight the key experiments in the identification of the MICOS complex, (2) to discuss the purification of large megadalton complexes for structural studies and (3) to bring into limelight the newer questions posed by the same.

Monday, Nov 25th 2024

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

Seminar Hall, TIFR-H