

Seminar

Dynamic force adaptation of motors on intracellular lipid droplets and the molecular mechanisms

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Majority of vesicular motion in cells is bidirectional and is carried out by kinesins and cytoplasmic dynein-1 on MTs. Using lipid droplets(LDs) in Cos1 cells as a model system, we have discovered a load induced (with optical trap) dynamic force adaptation of motors on LDs. Remarkably, force measurements on LDs in vivo and in vitro revealed that, these sub-cellular cargos can 'sense' when they are stuck, and respond by dynamically increasing efficacy of force production. This phenomena is totally unexpected and contradicts the current thinking in the field that the groups of molecular motors function in a stochastic way.

Tuesday, Aug 8th 2017

4:00 PM (Tea/Coffee at 3:45 PM)

Auditorium, TIFR (FReT-B)