

Seminar

A juggling act by intrinsically disordered regions assisted mRNP assembly between memory and neurodegeneration

Baskar Bakthavachalu

NCBS, Bangalore

Irreversible protein aggregation is commonly observed in neurodegenerative conditions. Several RNA binding proteins (RBPs) contain intrinsically disordered regions (IDRs) capable of promoting protein assembly in vitro. Gain-of-function mutations in the IDRs have been shown to be associated with many forms of neurodegenerative disease, in particular of amyotrophic lateral sclerosis (ALS). While IDRs are being extensively studied in context of neurodegeneration, their endogenous functions are relatively unknown and unstudied in vivo. I will describe experiments that analyze endogenous functions of IDRs present on *Drosophila* Ataxin2 (Atx2) an RBP previously shown to be important for long-term memory (LTM) and also linked to Spinocerebellar Ataxia Type 2. Our work provides new insight to neuronal RNA granule assembly and function in vivo, and points to an important role for Atx2-IDRs in neurodegenerative pathology. I will touch base on the ongoing experiments addressing the mechanistic details of this process in flies, mouse and iPSCs. I will also introduce on our ongoing efforts in using active genetics to control flavivirus infections.

Tuesday, Apr 23rd 2019

4:00 PM (Tea/Coffee at 3:30 PM)

Auditorium, TIFR-H