Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad - 500107

Seminar

Molecular Functions of DYRK1A, a kinase implicated in Down Syndrome

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DYRK1A, Dual-specificity tyrosine phosphorylation-regulated kinase 1A, is a member of the CMGC group of kinases. The DYRK1A gene is located on chromosome 21 in the Down Syndrome Critical Region (DSCR), a region associated with Down syndrome phenotype in human trisomy. Overexpression of DYRK1A in human trisomy is considered to be one of the leading causes of development of Down Syndrome phenotype. However, our understanding of the molecular mechanisms involved remains poor. Children with Down Syndrome exhibit a 20-fold higher incidence of leukemia, and a link between overexpression of DYRK1A and development of megakaryoblastic leukemia in mouse has been established. DYRK1A mutations in humans have been associated with general growth retardation, reduced brain volume, craniofacial abnormality, behavior and motor alterations. We are using molecular approaches to identify new substrates of DYRK1A, and establish its function/s in various cellular pathways. We hope our investigations would ultimately lead a better understanding of role of DYRK1A in neuropathology. In this presentation, I will share our story - identification of two histone acetyltransferases, p300 and CBP, as interaction partners of DYRK1A through a proteomics study, and discuss its role in regulating gene expression through enhancer regulation.

Monday, Feb 26th 2018

04:00 PM (Tea/Coffee at 03:30 PM)

Auditorium, TIFR-H