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

Students' Annual Seminar

Exploring the Role of Stx1 in Store-operated Calcium Entry

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Store-operated calcium entry (SOCE) is necessary for sustained calcium signalling in several cell types. Orai1, the pore subunit of store-operated CRAC (Calcium Release Activated Calcium) channels along with Stim1, the ER-membrane resident calcium sensor involved in Orai1 activation were believed to form the essential elements of SOCE. Point mutations in Orai1 and Stim1 have been found to result in immunodeficiency and autoimmunity in human patients and mice. Previous studies from the lab have shown that α-SNAP (alpha-soluble NSF associated protein) directly associates with Orai1 and Stim1 and is required for the functional assembly of the CRAC channel complex. It is also shown that α-SNAP's role in SOCE is independent of its function of SNARE-complex disassembly, following synaptic vesicle fusion. With the hypothesis that additional SNARE family proteins regulate SOCE, RNAi screens from the lab have further identified a target-SNARE, Stx1 as one of the potential SNARE family proteins to have a functional role in CRAC channel function. In my talk I will discuss some results that are indicative of a probable role of Stx1 in CRAC channel activity.

Friday, June 16th 2023

2:00 PM (Tea / Coffee 1.45 PM)

Seminar Hall, TIFR-H