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

Webinar

Biophysical organization of the plasma membrane and signaling are functionally intertwined

Nirmalya Bag

Cornell University, NY

Liquid ordered (Lo) nanodomains, a class of lipid-dependent, phase separated features in the plasma membrane, are hypothesized to facilitate protein interactions and transmembrane (TM) receptor signalling. However, the transience of the Lo nanodomains in live cells poses a major challenge to detect their participation in these processes. To address this, I used Imaging Fluorescence Correlation Spectroscopy (ImFCS) to precisely measure subtle diffusion changes of relevant chimeric probes and various signalling components of a model TM signalling system, namely signalling of immunoglobulin E (IgE) receptor, FcεRI, in live mast cells. My results provide direct evidence for lipid-based partitioning of selective signalling components in the Lo nanodomains to play a pivotal role in initiating receptor phosphorylation in the membrane inner leaflet.

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4:00 PM