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

Students' Annual Seminar

Differential EGFR signalling in Drosophila eye imaginal discs revealed by single molecule RNA FISH (smFISH)

Nikhita Pasnuri

Epidermal Growth Factor Receptor (EGFR) is broadly expressed during the Drosophila development, but its precise activation is regulated spatiotemporally by multiple ligands and feedback loops. EGFR signalling is known to play critical roles in regulating differentiation and proliferation all throughout Drosophila development in different tissue systems. Specifically in the eye imaginal disc, EGFR regulates proliferation to generate sufficient uncommitted cells from which all cell types in an ommatidia (repeating unit in the compound eye) are differentiated.

In this talk, I will show the unidirectional EGFR signalling from the photoreceptors to the non-photoreceptors revealed by single molecule RNA FISH (smFISH) for the mRNA of the canonical EGF ligand Spitz and the negative regulator Argos. Using knockdowns and overexpression of these specific EGF pathway genes, I will describe effects on cell proliferation and the adult eye phenotype. I will attempt to highlight how balance between the ligand and the feedback molecule might be important for precise ommatidial arrangement in the adult eye.

Friday, Apr 12th 2019

2:00 PM (Tea/Coffee at 1:30 PM)

Seminar Hall, TIFR-H