

Seminar

Molecular Dissection of Vomeronasal Neurons: Discovery of Novel Genes and Differential Endoplasmic Reticulum Environment

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Chemosensory neurons of the vomeronasal organ trigger genetically hardwired innate behaviours. Originating from a common progenitor, these sensory neurons diverge to express two distinct lineages defined by their receptor families and G-protein subunits – Gnao1 and Gnai2. My thesis reveals that this divergence extends beyond receptor identity to fundamental differences in cellular and molecular properties. Using single-cell transcriptomics and electron microscopy, I show that Gnao1-lineage neurons express specialised endoplasmic reticulum (ER) genes and exhibit distinctive ER ultrastructure. In addition, I identified novel, tissue-specific ER-resident proteins essential for GPCR expression in these neurons. These findings uncover a previously unrecognised layer of molecular, organellar and developmental specialisation that shapes sensory neuron function.

Tuesday, Jun 24th 2025

16:00 Hrs (Tea / Coffee 15:45 Hrs)

Auditorium, TIFRH