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

Seminar

G Protein-Coupled Receptor Signalling Pathways in the Pathogenesis of Type 2 Diabetes

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The prevalence and incidence of obesity and type 2 diabetes (T2D) have been increasing worldwide at an alarming rate. G protein-coupled receptors (GPCRs) are the largest group of membrane proteins and have emerged as a major drug target for multiple diseases, including metabolic disorders. As a postdoctoral fellow at the National Institutes of Health, USA, I investigated the role of a group of GPCRs known as purinergic receptors in the pathogenesis of obesity and T2D. My research utilised cell-specific knockout mouse models, primary metabolic cell cultures, transcriptomics, signalling pathway analysis to unravel the role of GPCRs in regulating whole-body glucose and energy homeostasis. These studies revealed that knockout or pharmacological inhibition of specific purinergic receptors protects mice from diet-induced obesity, fatty liver and systemic inflammation, thereby improving whole-body metabolism. Based on these results, I screened and characterised potent ligands for purinergic receptors in-vitro, and in mouse models of obesity and T2D. The identified potent GPCR ligands could be developed as drug candidates for the treatment of obesity and T2D.

Tuesday, Oct 11th 2022

4:00 PM (Tea/Coffee at 3:45 PM)

Auditorium, TIFR-H