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

Comprehensive Seminar

Exploring the Regulatory Dynamics of Ribonucleotide Reductase (RNR) upon DNA Damage

Marwa

The Ribonucleotide reductase (RNR) enzyme is essential for maintaining genomic integrity by catalysing the production of deoxyribonucleoside triphosphates (dNTPs), critical for DNA replication and repair. Tight regulation of RNR subunit expression and activity ensures proper dNTP balance, preventing genomic instability that can lead to disease-causing mutations. While its biochemical function has been extensively studied, recent evidence highlights the dynamic subcellular localisation of RNR subunits, particularly in response to DNA damage. Conflicting reports on RNR compartmentalisation suggest intricate regulatory mechanisms governing its activity and expression across the cell cycle. In this talk, I will describe emerging perspectives on RNR spatial dynamics, emphasising its nuclear localisation, transcriptional regulation, and involvement in DNA repair pathways. I will also briefly touch upon emerging non-canonical functions of RNR components beyond their roles in DNA replication and repair.

Friday, Jun 20th 2025

14:30 Hrs (Tea / Coffee 14:15 Hrs)

Seminar Hall, TIFRH