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

Comprehensive Seminar

Investigating mechanisms of nuclear actin-dependent DNA damage repair

Zeba Rani

Actin is one of the most abundant proteins in the cell, known for its structural and dynamic roles in the cytoplasm, including cell motility, division and transport. Interestingly, actin is also present in the nucleus, but its diverse nuclear functions remain somewhat debated. This was mainly due to absence of traditional filamentous structures, which made it harder to detect with conventional methods. Globular actin has been shown to be a part of transcriptional and chromatin remodelling complexes, and recent studies have shown even filamentous nuclear actin may have a role in diverse nuclear processes including DNA replication and DNA damage repair.

In this talk, I will highlight the emerging functions of nuclear actin, with a primary focus on its role in DNA damage repair and replication. In addition, I will very briefly discuss how DNA repair process differs between embryonic stem cells (ESCs) and differentiated cells, and nuclear actin may possibly influence processes of DNA repair through the course of cellular differentiation.

Friday, May 30th 2025

10:00 Hrs (Tea / Coffee 09:45 Hrs)

Auditorium, TIFRH