

Seminar

A mitosis-enriched antisense RNA, MCAT3, and its encoded novel protein, MSEP, synergistically coordinate mitotic spindle integrity

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Ensuring spindle pole integrity is crucial for accurate chromosome segregation. Yet, the intricate regulatory mechanisms governing the functional switch of key molecules involved in spindle pole integrity remain elusive. Our study discloses a novel safeguard mechanism, driven by the functional synergy between antisense RNA MCAT3 and its encoded protein, MSEP. Our analysis reveals that while MCAT3 contributes to mitosis and interphase-specific functions, MSEP specifically maintains mitosis specific functions. Mechanistically, we demonstrate the critical interaction of MCAT3 with RPS3 for both mitotic- and interphase-specific functions. Additionally, we demonstrate that the functional transition of RPS3 between interphase and mitosis is orchestrated by MCAT3. These findings establish a compelling model system for investigating the collaborative actions between antisense RNA and its encoded protein in spindle pole integrity.

Tuesday, Jun 18th 2024

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

Auditorium, TIFR-H