TIFR Centre for Interdisciplinary Sciences, Narsingi, Hyderabad 500075

Seminar

T4 Phage UvsW helicase-mediated lesion bypass DNA synthesis via fork regression

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Abstract: The restart of a stalled replication fork is a major challenge for DNA replication. Depending on the nature of the damage, different repair processes might be triggered; one is template switching, which is a bypass of a leading-strand lesion via fork regression. Using magnetic tweezers to study the T4 bacteriophage enzymes, we have reproduced in vitro the complete process of template switching. We show that the UvsW DNA helicase in cooperation with the T4 holoenzyme can overcome leading-strand lesion damage by a pseudostochastic process, periodically forming and migrating a four-way Holliday junction. The initiation of the repair process requires partial replisome disassembly via the departure of the replicative helicase. The results support the role of fork regression pathways in DNA repair.

***Date*: Tuesday, March 26th 2013**

***Time*: 11:30AM (Tea/Coffee at 11:15AM)**

***Venue*: Conference Hall, TCIS**

All are cordially invited