



Institute of
Molecular and
Cell Biology

SEMINAR ANNOUNCEMENT

DATE: 6 February 2012, Monday
TIME / VENUE: 10:00AM @ IMCB Seminar Room 3-46, Level 3, Proteos, Biopolis
SPEAKER: Dr. Karen Crasta, *Postdoctoral Research Fellow, Dana-Farber Cancer Institute, Harvard Medical School, Boston, USA.*



Whether whole-chromosome aneuploidy promotes tumorigenesis has been controversial, in large part due to the paucity of insight into underlying mechanisms. This study identified a mechanism by which mitotic chromosome segregation errors generate DNA breaks via the formation of structures called micronuclei. Whole chromosome-containing micronuclei form when mitotic errors produce lagging chromosomes. We tracked the fate of newly generated micronuclei and found that they undergo defective and asynchronous DNA replication, resulting in DNA damage and frequent pulverization of the chromosome in the micronucleus. Micronuclei can persist in cells over several generations but the chromosome in the micronucleus can also be distributed to daughter nuclei. Thus, chromosome segregation errors potentially lead to mutations and chromosome rearrangements that can integrate into the genome. Pulverization of chromosomes in micronuclei may also be one explanation for “chromothripsis” in cancer and developmental disorders, where isolated chromosomes or chromosome arms undergo massive local DNA breakage and rearrangement.

Host: Prof. Uttam Surana

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