IMG

Institute of Molecular Genetics
of the Czech Academy of Sciences

Regular Wednesday IMG seminar

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"PML compartment and nucleolus: when both structures meet together"

Promyelocytic leukemia protein (PML) functions as a scaffold for the accumulation of proteins in specific nuclear sites. This membrane-less compartment is essential for regulating various nuclear processes such as DNA repair, telomere maintenance, or chromatin modification. Under specific genotoxic stress, PML interacts with the nucleolus, forming the PML-nucleolar compartment, which undergoes dynamic structural changes due to the inactivation and reactivation of RNA polymerase I (RNAPI)-mediated transcription. Generation of PML nucleolar associations depends on the PML SUMO-interacting motif (SIM) and adjacent serine-rich region, which phosphorylation by casein kinase II regulates the interaction of SIM with SUMOylated proteins. PML nucleolar interaction is also positively regulated by p14ARF/p53 tumor suppressors. Besides the canonical PML interactors (DAXX, SP100, SUMO1, and SUMO2), this compartment accumulates damaged rDNA sorted away from the reactivated nucleolus. Using the I-PpoI endonuclease, we demonstrated that this interaction is triggered by unsolved rDNA damage suggesting that the PML compartment plays a role in maintaining the rDNA locus.

The seminar will be held

on Wednesday 7th June 2023 at 15:00

in the Milan Hašek Auditorium at IMG

(Institute of Molecular Genetics of the Czech Academy of Sciences, Vídeňská 1083, Prague 4)