Master Thesis Project

Regulation of chromatin incorporation of the centromeric histone variant CENP-A

Background:

CENP-A is a histone variant that specifies the identity of the centromere in all eukaryotic organisms. It is therefore essential for faithful chromosome segregation during mitosis. Misincorporation of CENP-A into other genomic locations can occur in different types of cancer and leads to increased genome instability. To understand the mechanisms that govern the loading of CENP-A onto centromeric DNA in a time and spatially controlled manner is therefore of crucial importance. We have recently identified different protein chaperones that form complexes with CENP-A prior to loading, and we have discovered that different posttranslational modifications contribute significantly to the regulation of CENP-A (Boltengagen et al., *Nucleic Acids Res. 2016*, Huang et al., *Nucleic Acids Res*. 2019, Bobkov et al., *Nat. Commun*. 2020).

We are looking for motivated students who are interested to further investigate the role and interplay of different posttranslational modifications of CENP-A in the context of the CENP-A loading process.

The studies will be conducted in cultured cells of *Drosophila melanogaster,* and a variety of techniques (standard molecular methods, cell culture methods, live cell labeling and quench-chase-pulse experiments, immunostaining, confocal microscopy, western blotting etc) will be applied.

When: Begin as soon as possible
Where: **Lusser Lab**, Institute of Molecular Biology, Biocenter, Medical University of Innsbruck, Innrain 80-82, 3rd floor.
Contact: **Dr. Alexandra Lusser** (Tel: 9003 70210; mailto:alexandra.lusser@i-med.ac.at)

September 30, 2021