TRR 374

Tubular system and interstitium of the kidney:
(Patho-) physiology and crosstalk

Seminar

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Targeting Malaria – Is Chromatin Dynamics a new Therapeutic Target?

The Längst-Lab research focuses on the cell nucleus, particularly the regulatory role of genome organisation, its influence on gene networks, and the maintenance and inheritance of activity states without alteration of the DNA sequence. This inheritance type— epigenetics — is a central process in organismal development and formation of distinct cell types.

Integrating biochemistry, biophysics, cell biology, and bioinformatics, we investigate the molecular mechanisms of epigenetics. Our team was the first to demonstrate that DNA packaging proteins actively move along DNA. This discovery shed light on the mechanisms behind this remodelling process and showed that the specific positioning of nucleosomes on DNA directly affects gene expression.

Currently, the lab is exploring the roles of RNA and non-canonical DNA structures in DNA packaging and their impacts on epigenetic regulation. Recent work focuses on screening for epigenetic drugs to develop treatments for ageing and malaria.

The talk will provide an overview of the functional organisation of chromatin in eukaryotes and its differences from those of the malaria-causing parasite Plasmodium falciparum. This functional and structural difference may be key to novel drugs killing the parasite and blocking the transmission of malaria.

Time: **Monday, May 12, 2025; 13:00h**
Location: **Seminarraum Physiologie**
VKL 4.1.29
Universität Regensburg
and **Zoom**

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