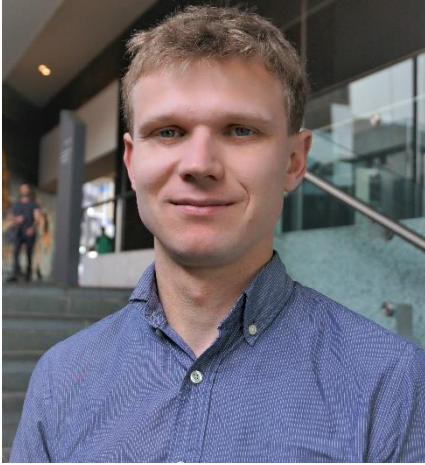


SFB 960-/RCB– Colloquium

Wednesday, July 7 2021, 5 p.m.
via Zoom



Dr. Stephan Hamperl

Institute of Epigenetics and Stem Cells
Helmholtz Zentrum München

Consequences of Transcription-replication conflicts in eukaryotic cells

Transcription–replication conflicts (TRCs) occur when the two critical cellular machineries responsible for gene expression and genome duplication collide with each other on the same genomic location. Although cells have evolved multiple mechanisms to coordinate these processes on individual chromosomes, it is now clear that conflicts can arise due to aberrant transcription regulation and premature proliferation, leading to DNA replication stress and genomic instability. As both are considered hallmarks of aging and human diseases such as cancer, understanding the cellular consequences of conflicts is of great importance. Using an episomal plasmid system, we have previously shown that co-transcriptional R-loops can aggravate such conflicts by creating an additional barrier to replication fork progression. In this seminar, I will summarize our current knowledge on how these encounters affect the genome and chromatin landscape of eukaryotic cells. Finally, I will introduce a new approach that is developed in the lab using proximity labeling with an engineered ascorbate peroxidase (APEX2) to identify new factors that are associated with transcriptionally-challenged replication forks.

Host: Joachim Griesenbeck
Biochemie III
joachim.griesenbeck@ur.de

<https://uni-regensburg.zoom.us/j/68383063397?pwd=UGIYQIRDZFJtQktLTStFcmdac3lSdz09>

Meeting-ID: 683 8306 3397

Passcode: 227176



Universität Regensburg

Regensburg-Center for Biochemistry