GBM/RCB – Colloquium

Tuesday, July 14th 2026, 2 p.m.

H 53

Prof. Dr. Oliver Mühlemann

University of Bern, Switzerland
Department of Chemistry, Biochemistry & Pharmacy

"Lost in translation: Trying to understand translation-dependent mRNA decay pathways"

Translation is a complex process requiring the correct interplay of many different factors, and hence, many things can go wrong during translation. The mRNA might be defective, contain premature stop codons, lack a stop codon, or contain difficult-to-translate sequences. Moreover, ribosomes, tRNAs, or any other translation factor might be defective or limiting. Cells have evolved various ways to sense different problems during translation and trigger different responses, including the decay of the trouble-making mRNA, degradation of the faulty nascent polypeptide, removal of occluding factors, disassembly and recycling (or degradation) of the stuck ribosomal subunits, and activation of stress response pathways that first halt further translation and eventually elicit apoptosis when the problem cannot be solved.
The Mühlemann lab at the University of Bern (Switzerland) is generally interested in elucidating the molecular mechanisms of translation surveillance pathways. How are different translation problems sensed? And when and how are which pathways activated? In this seminar, I will present our work on (i) a surveillance pathway that recognises occluded ribosomal A-sites, and (ii) our progress in establishing an in vitro system to study nonstop mRNA decay (NSD).

Host: Dr. Nina Ripin, Biochemistry I, nina.ripin@ur.de

Universität Regensburg
Biochemie-Zentrum Regensburg

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