Sveučilište u Zagrebu
Prirodoslovno-matematički fakultet
Kemijski odsjek

Hrvatsko društvo za biokemiju i molekularnu biologiju

HDBMB

KOLOKVIJ

Eilika Weber-Ban

ETH Zurich, Institute of Molecular Biology and Biophysics

održat će u petak 26. siječnja u 11:15 sati u predavaonici P1 (prizemlje zgrade Kemije, Horvatovac 102a) kolokvij pod naslovom:

Mycobacteria Under Stress: Pupylation, Proteasomes, and Beyond

Mycobacteria and other members of Actinobacteria display high adaptability to various stressors, allowing them to thrive under diverse and often harsh conditions. Central to their resilience is an intricate network of proteostasis pathways. Part of this network is a gene locus encoding a unique proteasomal complex, a post-translational modification system for targeting proteins to this complex, and a member of the emerging class of WYL-domain containing transcription factors.

I will discuss how this gene locus, referred to as the pupylation-proteasome system (PPS) gene locus, contributes to the survival of mycobacteria under genotoxic stress. I will show how mycobacterial proteasome complexes recruit and process their substrates and which role is played in this process by prokaryotic ubiquitin-like protein Pup, and I will show how mycobacteria use a unique transcriptional mechanism to orchestrate the DNA damage response.

Understanding mycobacterial proteostasis pathways and the role of pupylation and WYL-domain containing transcription factors in stress survival not only sheds light on the remarkable adaptability of these bacteria but also has implications for potential therapeutic strategies against tuberculosis and related diseases.