

PhD students: current position available

A PhD student position is currently available in the Weber-Ban group in the field of “Pupylation and Proteasomal Degradation in Mycobacteria”.

Rapid changes in their environment are constant challenges for mycobacteria, and survival under these conditions requires adaptive response mechanisms including--as one cornerstone--protein degradation. Two cytosolic protein degradation systems invariantly exist in all mycobacteria, both under investigation in our research group: the modular Clp protease complexes, and a bacterial proteasome assembly unique to the actinobacterial phylum. Substrates to the latter are recruited by a ubiquitin-like pathway termed pupylation, wherein the small protein Pup (prokaryotic ubiquitin-like protein) is conjugated to lysine residues of protein substrates. Clp- and proteasome mediated degradation have emerged as novel drug targets against tuberculosis. Our group has made landmark contributions to the pupylation field by identifying the enzymes involved in the pathway, the Pup ligase and deligase, by elucidating their structures, both alone and in complex with Pup, and by unraveling their mechanism of action. We also discovered a novel, ATP-independent regulator of the bacterial proteasome, which we termed Bpa (bacterial proteasome activator), and thereby characterized a second proteasomal degradation pathway in actinobacteria, which is independent of pupylation and selects substrates based on their disordered nature. A future focus of the group is the elucidation of regulatory circuits involving these multiple degradation pathways. Screens for molecular interaction partners and for genetic regulation have been set up and will provide exciting new research avenues for the next years. Mechanistic and structure/function principles of the degradation pathways along with *in vivo* relevance will be addressed in the framework of the offered position.

We are looking for a motivated student with a master degree or equivalent in the field of Biochemistry/Biology. Interested candidates should send an E-mail along with a current CV to: **eilika.weber-ban@mol.biol.ethz.ch**

Please apply by April 30th 2018.

Applicants are usually asked to visit the group for an interview, where they present their master thesis research and also have a chance to meet the group and discuss possible projects with the PI and other group members.

Although the Weber-Ban group is a member of the Life Science Zurich Graduate School (LSZGS), we also recruit by individual applications outside the bi-yearly program recruitment periods. Successful applicants are later given the opportunity to join one of the LSZGS PhD Programs.

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