

Master's Thesis Opportunity in Viral Entry & Endosomal Biology

The laboratory of Prof. Hanna-Mari Baldauf at the Max von Pettenkofer Institute, LMU Munich, is seeking a motivated Master's student to investigate the role of host-cell ion channels in respiratory virus infection, combining molecular virology, cell biology, and advanced microscopy.

Background & Project description

Respiratory viruses, including SARS-CoV-2, rely on host-cell pathways regulating endosomal trafficking, intracellular membrane dynamics, and lysosomal function to establish infection. Two-pore channels (TPC1 and TPC2) are endolysosomal ion channels involved in regulating organelle function and intracellular trafficking. However, their contributions to viral infection and infection-associated cellular responses remain incompletely understood. The project aims to investigate their role in respiratory virus infection, focusing on intracellular viral trafficking and endolysosomal function.

Techniques you will learn

- Mammalian cell culture and genetic manipulation, including siRNA-mediated knockdown and Lentivirus-based gene expression
- Molecular biology techniques, including Cloning, RNA isolation, qPCR, and Western blotting
- Functional assays for viral entry and infection
- Immunofluorescence staining and confocal microscopy
- Quantitative image analysis and visualization of intracellular trafficking
- Experimental data analysis, interpretation, and scientific figure preparation

Requirements

- Currently enrolled in a Master's program in virology, molecular biology, biochemistry, biomedicine, or a related field
- Previous experience with mammalian cell culture, fluorescence microscopy, or molecular biology techniques is an advantage
- Strong interest in molecular virology, host–pathogen interactions, and intracellular trafficking
- Motivation to learn new experimental and analytical techniques
- An organized, reliable, and independent approach to experimental work

Start Date: As soon as possible

Interested students should send a detailed CV, transcripts, possible start date and one-page motivation letter to Baldauf@mvp.lmu.de and Khatri@mvp.lmu.de