



Master's Thesis Opportunity in Viral Entry & Endosomal Biology (m/f/x)

The **Prof. Dr. med. Oliver T. Keppler** lab at the **Max von Pettenkofer Institute** is seeking a motivated and ambitious Master's student for a **Master's thesis project**. The project is designed for students interested in an immersive research experience with the opportunity to work closely on mechanistic studies of viral entry and host regulation.

Background:

Respiratory viruses, including SARS-CoV-2 and influenza, rely on endosomal maturation and ion channels for viral entry. Our transcriptomic analyses have identified candidate host genes regulating endosomal trafficking and early infection steps. Using **virus-like particles (VLPs)**, we study viral entry safely and quantitatively without BSL-3 containment.

Project Description:

The thesis will focus on **validating host factors regulating viral entry**. You will manipulate gene expression using **siRNA or plasmids**, measure effects with **qPCR, Western blotting, and VLP entry assays**, and visualize trafficking with **confocal microscopy**. Optional extension: testing identified factors in influenza virus entry.

Techniques you will learn:

- Cell culture, transfection, transduction, siRNA knockdown
- Virus propagation and infection assays
- qPCR and Western blotting
- VLP-based entry assays and confocal microscopy
- Live-cell imaging of viral trafficking and endosomal dynamics
- Data analysis and visualization

Requirements:

- Master's student in virology, molecular biology, biomedicine, or related field
- Prior experience in cell culture, fluorescence microscopy, qPCR is a plus.
- Strong motivation and full commitment to the research objectives
- Highly organized, reliable, and independent worker

Starting Date: As soon as possible

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

People with disabilities who are equally as qualified as other applicants will receive preferential treatment.