

PhD position available in the Barisch Lab

The Molecular Infection Biology Division at Osnabrück University invites applications for

One PhD Researcher

to work on

“Role of mycobacterial cell wall components in phagosomal escape of *Mycobacterium marinum* in *Dictyostelium*”

PROJECT BACKGROUND - Tuberculosis is caused by *Mycobacterium tuberculosis* (*Mtb*) and is responsible for 1.6 million deaths worldwide every year. The infection is initiated when *Mtb*, present in exhaled droplets, is inhaled into the lungs in which the bacteria are taken up by alveolar macrophages. Inside macrophages, mycobacteria manipulate their environment to render the *Mycobacterium*-containing vacuole (MCV) permissive for their survival and replication. *Mtb* and other pathogenic mycobacteria induce damage at the MCV membrane to escape into the cytosol, a step that precedes the egress of the bacteria and their dissemination to neighbouring cells. The bacterial translocation into the cytosol depends on the secretion system ESX-1 and the secreted pore-forming peptides ESAT-6 & CFP-10.

Recently, it was shown ESAT-6 acts in concert with phthiocerol dimycocerosate (PDIM), a mycobacterial branched apolar lipid that is released into host membranes upon infection. It is largely unknown if besides PDIM, other components of the mycobacterial cell wall are involved in phagosomal escape.

This project seeks to unravel the function of cell wall components in phagosomal escape of mycobacteria using the *Dictyostelium*/*M. marinum* infection model.

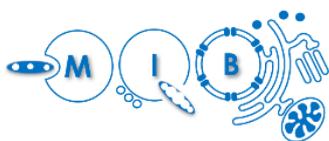
This project is part of the DFG-funded priority program **SPP2555: “Exit strategies of intracellular pathogens”** and offers the collaboration with > 20 labs in Germany (<https://www.spp2225.rwth-aachen.de/go/id/ccsvy/>)

HOST INSTITUTE - The successful candidate will join an international team of researchers with expertise in lipid and molecular biology as well as a diversity of imaging techniques. The UOS is a young university located in the historical town of Osnabrück, the only German city situated in a national park. The Molecular Infection Biology Division, headed by Dr. Caroline Barisch, is embedded in the recently established interdisciplinary Research Institute CellNanOS (www.cellnanos.uni-osnabrueck.de) and the Collaborative Research Center “SFB944: Physiology and Dynamics of Cellular Microcompartments”. The Division and Research Centers offer outstanding scientific environments as well as direct access to state-of-the-art facilities in synthetic chemistry, chemical biology, biomolecular mass spectrometry & super-resolution microscopy (<https://www.ibios.uni-osnabrueck.de>).

REQUIREMENTS - We are looking for an ambitious and interactive individual with a master degree in cell biology, microbiology or biochemistry. Experience with pathogenic bacteria, modern molecular biology tools as well as a general interest in cellular microbiology and host-pathogen interactions would be advantageous. Perseverance and the aspiration to work in a strongly interdisciplinary research environment are essential.

CONDITIONS OF EMPLOYMENT - The application deadline is **1st of February 2021**. The position will be filled as soon as possible. The initial period of employment is 3 years. An extension is anticipated. Salary is at the E13/65% level according to the German TV-L scale. The UOS is an equal-opportunity employer and especially encourages women to apply. Applications from handicapped persons will be favoured if all other qualifications are equal.

HOW TO APPLY - Please send applications including your Curriculum Vitae, a cover letter describing your motivation, publication list, copies of certificates and contact details of three academic references as a **single PDF file** to: caroline.barisch@uni-osnabrueck.de. Further information can be obtained from Dr. Caroline Barisch, phone: +49 (0) 561 969 7232 or by visiting our website: <https://www.barischlabuos.com>.



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Molecular Infection Biology

