

The **Bernhard Nocht Institute for Tropical Medicine** (www.bnitm.de) is the largest Research Institute for Tropical Medicine in Germany and is the National Reference Centre for Tropical Pathogens, a WHO Collaborating Centre and member of the Leibniz Research Association.

For the project 'Identification and characterization of novel factors mediating *Plasmodium falciparum* egress from the red blood cell', within the DFG Priority Program SPP2225: Exit Strategies of Intracellular Pathogens, the Bernhard Nocht Institute for Tropical Medicine (BNITM) in Hamburg is looking for a highly motivated

PhD Student (m/f/d)

to study

proteins essential for egress of the malaria parasite from its host cell

Description of the project:

Exit of the protozoan parasite *Plasmodium falciparum* from its host red blood cell is an essential process for propagation of the infection. However, only a few parasite proteins involved have been identified so far and the underlying molecular mechanisms are not well understood. Egress is linked to the release of apical secretory organelles termed exonemes (1), which contain two known regulators of egress, the subtilisin-like serine protease SUB1 and the aspartic protease plasmepsin X (PMX). SUB1 is proteolytically cleaved by PMX and released from exonemes to the PV, where it activates other proteins involved in egress (2, 3). Given the central function of both proteins and the fact that they are the only known constituents of exonemes so far, we will further characterize the exoneme proteome in this project to identify novel and essential egress factors. In close interaction with other malaria research groups, the successful candidate will receive a comprehensive training in molecular and cell biology, ranging from the generation of transgenic cell lines to the application of state-of-the-art imaging techniques including superresolution and time-lapse video microscopy.

References:

- Yeoh S, O'Donnell RA, Koussis K, Dluzewski AR, Ansell KH, Osborne SA, Hackett F, Withers-Martinez C, Mitchell GH, Bannister LH, Bryans JS, Kettleborough CA, Blackman MJ. 2007. Subcellular Discharge of a Serine Protease Mediates Release of Invasive Malaria Parasites from Host Erythrocytes. *Cell* 131:1072–1083.
- Nasamu AS, Glushakova S, Russo I, Vaupel B, Oksman A, Kim AS, Fremont DH, Tolia N, Beck JR, Meyers MJ, Niles JC, Zimmerberg J, Goldberg DE. 2017. Plasmepsins IX and X are essential and druggable mediators of malaria parasite egress and invasion. *Science* (80-) 358:518–522.
- Pino P, Caldelari R, Mukherjee B, Vahokoski J, Klages N, Maco B, Collins CR, Blackman MJ, Kursula I, Heussler V, Brochet M, Soldati-Favre D. 2017. A multistage antimalarial targets the plasmepsins IX and X essential for invasion and egress. *Science* (80-) 358:522–528.

Your Profile:

- diploma/master degree or equivalent in life sciences
- background in molecular and cellular biology
- interest in parasitology
- excellent teamwork and communication skills
- proficiency in English (written and spoken)
- able to work independently and to develop creative work

Our benefits:

- an interesting and challenging job, which will be performed in the newly opened Centre for Structural Systems Biology (CSSB) at the DESY Campus in Bahrenfeld
- integration into an open-minded and motivated team
- a highly collaborative research team
- chance to present the project at national and international conferences
- a structured training program for PhD students (BNITM graduate school)
- a central location at the Landungsbrücken, which is easily accessible by public transport
- 30 days holidays per year
- flexible and family-friendly working hours
- childcare subsidy
- subsidy for HVV-ProfiTicket
- company pension scheme
- opportunities for further education and training
- special conditions in selected sports and fitness clubs in Hamburg

Starting date will be as soon as possible. The position is initially limited to 3 years and is remunerated with 65% E 13 TV-AVH according to the rules of the public service under the TV-AVH (collective agreement of the "Arbeitsrechtliche Vereinigung Hamburg").

We support our employees in achieving a work-life balance and promote the professional equality of women and men. We strive to assist women in their scientific career, increase the number of women in research and reduce under-representation in all areas and positions in general. Applicants with disabilities will be given preference when equally qualified.



Please apply **by 26th of January 2021** preferably **via our online form**:

<https://jobs.bnitm.de/PhD-Student-mfd-CSSB-eng-f124.html>

with the documents required: motivation letter, CV, high school and university certificates and the name and contact information of two references.

Alternatively you can submit your application **referring to "PhD_CSSB"** via postal mail to: Bernhard Nocht Institute for Tropical Medicine, Ms. Katja Büniger, HR Department, Bernhard-Nocht-Str. 74, 20359 Hamburg, Germany.

If you have any questions regarding the application process or the selection procedure, please contact Ms. Katja Büniger (buenger@bnitm.de) from the Human Resources Department.

For further questions please contact Dr. Paul-Christian Burda (burda@bnitm.de).