

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.

The **Molecular Parasitology group of Dr. Joachim Michael Matz** at the Bernhard Nocht Institute for Tropical Medicine in Hamburg is looking for a highly motivated

PhD Student (m/f/d)

to study

SNARE proteins in human malaria parasites

Description of the project:

Malaria is a mosquito-borne disease that puts half of the world's population at risk of infection. It is caused by unicellular *Plasmodium* parasites, which repeatedly invade and lyse red blood cells in the human bloodstream. Erythrocyte infection is initiated by an extracellular *Plasmodium* merozoite which attaches to the host cell and then pushes itself into a growing membrane sack. Within this parasitophorous vacuole, the parasite matures and divides until a new generation of invasive daughter merozoites is formed. Invasion, parasite growth and exit from the host cell rely on highly specialized secretory pathways that are utilized by *Plasmodium* to deliver its proteins to the parasite plasma membrane, to the parasitophorous vacuole and even to the cytosol and surface of the erythrocyte where they modulate the biophysical properties of the host cell. These pathways converge at the parasite surface where cargo-laden vesicles fuse with the *Plasmodium* plasma membrane. Such fusion events are typically facilitated by SNARE (soluble N-ethylmaleimide-sensitive-factor attachment receptor) proteins. The genome of *Plasmodium falciparum*, the most virulent human malaria parasite, encodes 25 SNARE domain containing proteins and we identified some of them as likely regulators of vesicle fusion at the parasite plasma membrane.

Hence, it is the goal of the doctoral project to characterize the role of these SNARE proteins in parasite development, protein secretion and host cell remodeling. The successful candidate will receive a comprehensive training in molecular and cell biology, ranging from the generation of transgenic cell lines (Cas9, DiCre, etc...) to the application of various state-of-the-art imaging techniques, such as live fluorescence microscopy, time-lapse microscopy, super resolution microscopy and electron microscopy. This will be supplemented with biochemical and computer-based approaches to elucidate the molecular mechanisms underlying a vital and potentially druggable pathway in *Plasmodium falciparum*.

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)
- Ability to work independently and to develop creative work

Our benefits:

- An interesting and challenging research project
- Comprehensive training in state-of-the-art genetic and microscopic techniques
- Integration into an open-minded, collaborative, and highly motivated research team
- A structured PhD training program and opportunities for further education and training
- A chance to participate in national and international conferences
- A central and easily accessible location close to the Landungsbrücken
- Flexible and family-friendly working hours
- Childcare subsidy
- Subsidy for HVV-ProfiTicket
- Company pension scheme
- 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 healthy 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.

As a member of the Diversity Charter, the largest diversity management network in Germany, we are also committed to making diversity an integral part of our institute culture. It is our goal to create a working environment that is free of prejudice.



Please apply **by 25.02.2024** via our **online form** with a motivation letter, CV, high school and university certificates and the names and contact information of two references. Alternatively, you can submit your application referring to "**PhD_Molecular Parasitology**" 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. Joachim Michael Matz (joachim.matz@bnitm.de)