

## Job Advertisement No. 05/2018

The **Leibniz Institute for Natural Product Research and Infection Biology – Hans Knöll Institute –** (HKI, [www.leibniz-hki.de](http://www.leibniz-hki.de)) investigates the pathobiology of human-pathogenic fungi and identifies targets for the development of novel antibiotics. The **Department of Microbial Pathogenicity Mechanisms** ([www.leibniz-hki.de/en/microbial-pathogenicity-mechanisms.html](http://www.leibniz-hki.de/en/microbial-pathogenicity-mechanisms.html)) invites applications for

# Doctoral Researcher (m/f)

in the field of Microbiology / Infection Biology / Cellular Microbiology. The project will be financed by internal resources, but will be integrated into the existing networks of our department.

**Project background:** Fungi infect billions of people annually, kill as many people as tuberculosis or malaria and are a major problem in the clinical setting. *Candida albicans* is a major fungal pathogen and a frequent cause of superficial and fatal infections. However, most humans are asymptotically colonised by this fungus as a part of their commensal microbiota. One of the most studied virulence attributes of *C. albicans* is the yeast-to-hypha transition and the expression of hypha-associated genes. We recently discovered that one of these genes, ECE1, encodes a polyprotein which is processed into eight peptides, One of them is Candidalysin, the first peptide toxin identified in a human pathogenic fungus (Moyes *et al.* 2016 *Nature*). This toxin plays central roles during interaction with epithelial cells and macrophages. However, the roles of the other, non-Candidalysin peptides are still unknown. Based on preliminary unpublished data, we propose that non-Candidalysin Ece1 peptides have at least two key functions: (1) they are required for fungal processes during hypha formation and (2) they act as effector peptides and modulate host responses analogous to effectors in pathogenic bacteria and fungal plant pathogens.

In this project, we will investigate the role of the non-Candidalysin peptides of Ece1 in *C. albicans* using cell culture models, genetic manipulations of the fungus and current molecular assaying techniques.

### We expect:

- a Master's degree (or equivalent) in Natural Sciences (e.g. Biology, Biochemistry, Microbiology). Candidates about to earn their degree are welcome to apply.
- desirable methodological skills: Practical experiences in one or more of the following subjects: Microbiology, Molecular Biology, Infection Biology, Cellular Biology. Practical experience in cell culture or fungal genetics is an advantage.
- high motivation, creativity and interest to shape your own thesis project
- an integrative and cooperative personality
- very good communication skills in English (laboratory language at our department)

### We offer:

- a highly communicative atmosphere and a scientific network providing top-level research facilities
- a doctoral researcher position (TV-L E13, 50%) for at least three years
- integration into one of our graduate schools: ILRS ([www.ilrs.de](http://www.ilrs.de)) or JSMC ([www.jsmc.uni-jena.de](http://www.jsmc.uni-jena.de)), including a comprehensive mentoring program with supervision by a team of advisors and a top-level PhD training program with courses in state-of-the-art research technologies and soft skills
- Jena – City of Science: a young and lively town with dynamic business activities, successful scientific centers of innovation and a vibrant cultural scene around the famous Friedrich Schiller

For further Information please contact Prof. Dr. Bernhard Hube ([career@leibniz-hki.de](mailto:career@leibniz-hki.de)).

Complete applications in English should include a CV, certificates, transcripts, list of publications, brief statement of research experiences, a list of three potential references, and should be submitted by **May 15, 2018** via the **online application system** of the HKI.

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