

Job advertisement no. 129/2024

The department **MICA - Anti-infectives from Microbiota**, led by Prof. Christine Beemelmanns at the Helmholtz-Institute for Pharmaceutical Research Saarland (HIPS) in Saarbrücken, is offering a position as

Doctoral Researcher (f/m/d)

Project title: Natural product driven analysis of bacterial symbionts

The Helmholtz Institute for Pharmaceutical Research Saarland (HIPS) focusses on identifying and developing new treatment options for infectious diseases with an emphasis on natural product research. HIPS was jointly started in August 2009 by the HZI in Braunschweig and Saarland University on Campus Saarbrücken.

In 2015 HIPS moved into a new 4500 m² research building in which currently 220 international employees work. HIPS represents the first and only publicly funded extra-university research unit in Germany dedicated to pharmaceutical research. The Institute collaborates with universities and various industries both nationally and internationally. Researchers in the department **Anti-infectives from Microbiota** are analyzing and identifying **novel natural products from unique bacterial species and microbial consortia** applying diverse approaches and methods mainly from the field of biotechnology, microbiology, molecular biology and biochemistry.

The **PhD project META-NAT** focusses on the identification of novel bacterial natural product producers and the metabolic analysis of communities thereof. The project will make use of state-of-the-art microbiological techniques and sequencing technologies, and combine bacterial cultivation with natural product discovery efforts to understand the natural functions of secondary metabolite.

The PhD project is structured in two **interconnected research pillars**:

1. Metabolic analysis of bacterial natural product producers

- Focus on the analysis of the secondary metabolome of bacterial producers
- Utilizing high-resolution mass spectrometry to monitor and optimize product formation
- Isolation of novel natural products and structural characterization

2. Genome sequencing of bacterial natural product producers and biosynthetic pathway analysis

- Isolation of DNA and whole genome sequencing
- Genome mining for cryptic and unusual biosynthetic pathways
- If applicable cloning of biosynthetic genes for pathway analysis or manipulation of production host

In this project, the successful candidate will contribute to cultivating novel bacterial species and spearhead genome-sequencing efforts for genome mining and comparative studies. Analysis of fermentation conditions will ignite studies into the natural product repertoire. A particular focus should be set on identification of novel natural products. The PhD candidate will have the chance to be trained on state-of-the-art analytical instruments and use this knowledge for natural product identification efforts. This multi-faceted approach will enable the candidate to gain expertise in microbial cultivation techniques and apply advanced molecular biological and analytical tools for the identification of novel natural products. Novel chemical structures should be elucidated by e.g. mass spectrometry and nuclear magnetic resonance techniques.

Qualifications:

- Master degree or equivalent in Chemistry, Biotechnology, Pharmacy, Life Sciences, or related fields.
- Strong hands on experience in laboratory workflows, analytical techniques and/or microbiological cultivation techniques.
- General understanding of chemical and biochemical transformations and molecular biological approaches.
- Ability to pay attention to details, pursue research independently and work in a goal-oriented manner.
- Willingness to work in a plural, collegial, international and interdisciplinary environment.
- Excellent English communication skills (written and spoken); very good skills in scientific writing

Disabled persons are given preference in the case of equal professional qualification. The HIPS aims for a corporate culture of appreciation and promotion of equal opportunities between women and men. The position is suitable for part-time work.

Advantageous for this position:

- Experience in next-generation sequence methods/techniques
- Experience in DNA isolation, PCR and cloning techniques
- Isolation of bacterial strains, microbial cultivation techniques, phylogenomic analyses

We offer:

- Modern laboratories and state-of-the-art instrumentation
- A dynamic and international research environment
- Extensive further training opportunities and the opportunity to enroll in a structured PhD program
- Unique network of excellent partners to support your research endeavors
- 30 days vacation (24.12. & 31.12. are considered as completely free days)
- An annual additional payment (Weihnachtsgeld) analogue to § 20 TVöD
- Social security included
- Flexible working hours and workplace design
- DO IT- PhD initiative <https://www.helmholtz-hzi.de/de/karriere/do-it-doktorandeninitiative>
- Welcome Office, Family Office
- Buddy System for new doctoral researchers

Starting date: as soon as possible, 2024 or early 2025 - initial contract for 3 years.

Salary: a like E13 TVöD/Bund (55%)

Probation period: 6 months

Working place: Saarbrücken

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Closing date: **30 October, 2024**

Application: Applicants are required to complete the online application form here: <https://hzi.opencampus.net/> (Please select Job No. **129/2024**)

For further information, please contact Prof. Christine Beemelmans directly by email: christine.beemelmans@helmholtz-hips.de