

We are looking for a **PhD Student (m/f/d)** to join the **Department of Microbiome Science** at the Max Planck Institute for Biology in Tübingen, Germany.

Research:

We are using a combination of bacterial genetics, mass spectrometry and MALDI imaging to study the role of **lipids in microbiome-host interactions**. Recently, sphingolipids and inositol lipids produced by the commensal gut bacterium ***Bacteroides thetaiotaomicron (Bt)*** have gained significant attention for their impact on intestinal homeostasis, immune responses and host lipid profiles. However, the identity and mechanism of the genes responsible have not yet been fully characterized. In response, we plan to use a **Bt transposon insertion library** for **mass spectrometry-based lipidomic screening** to explicitly identify and characterize the genetic determinants of **Bt lipid biosynthesis** and study their role in host-microbiome symbiosis.

Project Description:

Anticipated experimental work will include the generation of library replicates, establishing a **MALDI mass spectrometry-based screening strategy**, mass spectrometry data analysis and **lipid profiling** of library mutants for the **identification of genes** involved in Bt lipid biosynthesis, and the characterization of those genes and lipid biosynthesis pathways in **cell culture assays** and/or **gnotobiotic mouse models**.

Position Requirements:

- Must hold a Master's (or Diploma) degree in a relevant subject;
- Must have a strong background in analytical chemistry, biology, molecular medicine or related fields;
- Must have working knowledge of mass spectrometry and lipidomics;
- Must have working knowledge of microbiology and molecular biology;
- Must have excellent English communication skills (written and spoken);
- Experience with high-resolution mass spectrometry (FT-ICR), MALDI imaging, and mass spectrometry data analysis (Compass DataAnalysis, SCiLS Lab) is a plus;
- Working knowledge of bacterial genetics is a plus;
- Hands-on experience with cell culture and/or mice is a plus.

We offer

- A fully funded research position (payment level according to E13 65% TVöD Bund);
- Tailored support from your advisor and a thesis advisory committee;
- The enrolment in the **Tübingen International PhD Program in the Biological Sciences (TIPP)** (further information: <https://www.phd.tuebingen.mpg.de/tipp>).

Interested?

Applications (cover letter, CV, and list of references) should be sent to micro_admin@tuebingen.mpg.de. Please indicate "PhD position in Bacterial Lipidomics" in the mail subject and address to Prof. Ruth E. Ley, Ph.D. For further information about the research project, please contact claudia.mirretta-barone@tuebingen.mpg.de.

The Max Planck Society is committed to employing more disabled individuals and especially encourages them to apply. Overall, the Max Planck Society strives to increase diversity in all scientific fields. We particularly welcome applications from persons with backgrounds that have so far been underrepresented in science and research with regard to gender, age, professional and cultural background, family situation, sexual orientation, and nationality.

