



15. Sept. 2020

The department of Natural Product Biosynthesis (Prof. Dr. Sarah E. O'Connor) at the Max Planck Institute for Chemical Ecology invites talented and highly motivated candidates to apply for a

3-year PhD position to study mechanisms underlying the repeated evolution of metabolic pathways in plants

Project description: Natural products, or specialized metabolites, allow plants to interact with the environment using the language of chemistry. Benzoxazinoids (BXDs) are important plant defense compounds that are well known in the grasses. While the biosynthesis of BXDs has been investigated in maize, little is known about their formation in other plants. However, sequence comparisons suggest that the BXD pathway was repeatedly invented during the evolution of flowering plants. The aim of this project is to elucidate the biosynthesis of BXDs in evolutionarily unrelated plants to understand how Nature invents new molecular solutions for defense. The PhD candidate will combine state of the art transcriptomics and metabolomics approaches to identify biosynthetic enzymes, which will be characterized *in vivo* and *in vitro*. The results will provide new insights into the genetic and molecular mechanisms underlying the repeated evolution of metabolic pathways in plants.

Candidate requirements: We are looking for a highly motivated candidate trained in biochemistry and molecular biology. Experiences and good experimental skills in molecular techniques and LC-MS/MS as well as knowledge about plant specialized metabolism are an advantage. A Master's degree in Biology, Biochemistry or related disciplines is required for this position.

We are offering a 3-year PhD position. Payment will be based on the tariff contracts for the public service (50% E13). We provide an excellent research environment with enthusiastic scientists from different nationalities in the department of Natural Product Biosynthesis (Prof. S.E. O'Connor) at the Max Planck Institute for Chemical Ecology in Jena, Germany (www.ice.mpg.de). The PhD student will be associated with the International Max Planck Research School (IMPRS, <http://imprs.ice.mpg.de>).

How to apply: The Max Planck Society is an equal opportunity employer and strives to employ both genders equally, as well as to employ more individuals with disabilities. Therefore, we encourage all applicants, independent of their nationality, gender, or disability, to apply for this position. Please send your application as a **single pdf** in English including a letter of motivation and research interests, CV, relevant certificates (degree certificates etc.) and the name and address of at least one referee to Dr. Tobias Köllner: phd-bxd@ice.mpg.de

The deadline for applications is **October 31, 2020**.

The position is available from December 1, 2020.

