



The Max Planck Institute for Chemical Ecology, Department of Entomology has an opening for a

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PhD student (m/f)

Dr. Yannick Pauchet

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Project Description

The field of ecological immunology seeks to understand the evolutionary and ecological process which shaped and maintained variation in insect immunity. Recently, our group demonstrated that adaptation by the specialist *Heliothis subflexa* (Heliiothine) to withanolides, an anti-herbivore compound of *Physalis* plants, directly and indirectly protect the larvae from bacterial pathogens [1]. Beyond simply countering plant-produced compounds, *H. subflexa* has succeeded in converting the inhibitory effects of withanolides into activation effects for its own advantage. In the context of a DFG funded project, the PhD student will work on the mechanisms by which *H. subflexa* overcame the inhibitory effects of withanolides. The project is based on three major objectives, (1) Identification and characterization of possible withanolide receptors or decoy proteins, (2) Analysis of withanolide metabolism, (3) Impact of withanolides on plant and larval gut microbiome. Furthermore, the PhD student will analyze the effects of other plant-produced anti-herbivore compounds on the immune system of specialist insects to identify general effects of plant chemistry on ecological immunology.

We are looking for a motivated student with a University degree (M.Sc. or equivalent) and a focus on molecular biology, biochemistry, immunology, zoology or equivalent discipline. We expect good verbal and written communication skills. Experience working with proteomic, transcriptomic and/or metabolomic data as well as knowledge of different research methodologies (e.g. PCR; DNA, RNA and protein extraction; Western Blot; Enzyme assays; Cell and/or bacterial cultures; Insect rearing) is a plus.

We offer excellent technical equipment and close supervision in an international environment. A structured PhD program is offered by our graduate school (IMPRS) which provides interdisciplinary training by seminars, lectures and scientific workshops. The payment and benefits are based on the TVöD guidelines and the appointment is for 3 years with possibility of extension. The position is available from now.

The Max Planck Society is committed to increasing the number of individuals with disabilities in its workforce and therefore encourages applications from such qualified individuals.

Furthermore, the Max Planck Society seeks to increase the number of women in those areas where they are underrepresented and therefore explicitly encourages women to apply.

Application

Questions concerning the project or the position are welcome and should be addressed to Dr. Yannick Pauchet. To apply, please email a statement of motivation, CV and a letter of reference as a single PDF file to ypauchet@ice.mpg.de. Application deadline is February 28, 2017; however, applications will be accepted until the position is filled.



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Reference

[1] Barthel, A., Vogel, H., Pauchet, Y., Pauls, G., Kunert, G., Groot, A. T., Boland, W., Heckel, D. G., Heidel-Fischer, H. M. (2016). Immune modulation enables a specialist insect to benefit from antibacterial withanolides in its host plant. *Nature Communications*, 7: 12530