

PhD position on the evolutionary maintenance of selfish accessory chromosomes

A PhD position is available for three years to study the **mechanism of the evolutionary maintenance of accessory chromosomes in a fungal plant pathogen** with the Max Planck research group “Environmental Genomics” headed by Prof. Dr. Eva H. Stukenbrock and supervised by Dr. Michael Habig. The Max Planck group is affiliated with the **Max Planck Institute for Evolutionary Biology** in Plön and the **Christian-Albrechts University of Kiel** in the North of Germany. The position will also be associated with the Kiel Evolution Center, the Kiel Plant Center and the International Max Planck Research School for Evolutionary Biology – providing a unique scientific environment. The position is compensated at 65% of TV-L 13 and candidates are expected to complete a PhD.

Background

Selfish genetic elements are widespread in all groups of organisms. These elements are likely to have shaped the evolution of diverse biological systems, including genome structure, sex determination, and meiosis. To date, surprisingly little is known about the exact processes that underlie the spread of these elements. This project aims at understanding the transmission mechanism and its evolutionary consequences of selfish accessory chromosomes in a fungal pathogen with a particular focus on the role of histone modifications.

Recently, we could show that the accessory chromosome of the commercially important wheat pathogen *Zymoseptoria tritici* show a chromosome drive, i.e. are inherited to more progeny than expected by Mendelian segregation. In addition these chromosomes show a negative fitness effect and could therefore be considered selfish elements. The mechanism of this chromosome drive is however unknown – but recent data suggest that histone modifications might be involved. This project aims at understanding this previously unknown aspect of histone modifications and its exploitation by selfish chromosomes using the model organism *Z. tritici*. It will involve the establishment of in vitro crosses and the identification of the genetic and epigenetic traits responsible for the chromosome drive.

Expectations and Requirements:

We seek a highly motivated candidate who wants to actively drive a research project. The candidate must have university degree (Master or equivalent) in biology or a related field. High competence in experimental design, and English writing is a must. Ideally, the candidate has comprehensive experience in molecular genetics, work with plant pathogens or performance of evolution experiments. The selected candidate will have the opportunity to collaborate in an interdisciplinary team of biologists (molecular biologists, evolutionary biologists and population geneticists) as well as to pursue unique research in the field of chromosome biology.

Kiel University aims at a higher proportion of women in research and education, and, therefore, specifically encourages qualified female scientists to apply. Female scientists will be preferentially considered in case of equivalent qualification, competence and achievements.

Kiel University specifically supports employment of severely handicapped people. Therefore, severely handicapped applicants will be preferentially considered in case of suitable qualification.

Kiel University specifically welcomes application from people with migration background.

Application

Applications should include a motivation letter (max. 2 pages long), CV, publication list, names and contact details of two referees (who are familiar with the applicant's work), and copies of certificates. Deadline for applications is 15. July 2020. Applications should be sent to:

**Dr. Michael Habig, Botanisches Institut, Christian-Albrechts-Universität zu Kiel,
Olshausenstr. 40, 24118 Kiel**

**or preferentially as a single-PDF-document by e-mail to:
office@bot.uni-kiel.de**

We explicitly do not require application photos and therefore these shall be omitted.

Further information can be obtained from Dr. Michael Habig (mhabig@bot.uni-kiel.de).

Please also check:

<http://web.evolbio.mpg.de/envgen/>

<https://www.evolbio.mpg.de/imprs>

<http://www.kec.uni-kiel.de/>

<https://www.plant-center.uni-kiel.de/en/about-kpc>

