

Postdoktorandenstipendium "The importance of evolutionary reservoirs for pathogen emergence: an experimental test of the theoretical predictions with a *Caenorhabditis elegans* pathogen model system"

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Microbial parasites are ubiquitous and infect all living beings. Recent advances in theoretical epidemiology highlight the role of immunodeficient hosts as "incubators" for novel pathogen strains. However, none of the predictions has been tested experimentally. Here, these hypotheses will be tested using the *C. elegans* model system. This nematode possesses naturally developed physiological defence mechanisms against pathogens, and offers an exceptional opportunity to study the evolutionary context of pathogen adaptation. This proposal integrates evolutionary biology with molecular biology, epidemiology and medicine through the use of experimental evolution. Immunocompromised *C. elegans* hosts will be infected with several bacterial pathogens, and the evolutionary outcomes across pathogen species and type of *C. elegans* immunodeficiency will be compared. The underlying genetics of virulence evolution will be reconstructed by subsequent sequence analysis. This project will provide experimental insight into the temporal dynamics and the underlying genetics of pathogen evolution in immunocompromised hosts.

Projektbeteiligte

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