

Ph.D. fellow "Modular protein evolution in the arthropod immune response"

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Arthropods employ a wide array of mechanisms to defend themselves against pathogens. Comparative genomics studies showed that the genes which mediate these mechanisms evolve rapidly, both on the sequence level and in copy number. Most of the proteins encoded by these genes are composed of multiple protein domains, which can be understood as structural, functional and evolutionary modules of proteins. Domains can be gained and lost in the course of protein evolution and several lines of evidence suggest that such events of modular protein evolution happened frequently in the evolutionary history of arthropod immune proteins. This project aims to reveal precisely how modular protein evolution contributed to the generation of the diversity of immune proteins that can be observed in extant arthropods. Here, bioinformatic approaches will be used to identify gains and losses of protein domains in the evolutionary history of arthropod immune proteins and to explain the underlying genetic mechanisms.

Projektbeteiligte

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