

## **SURVIVAL OF MALARIA PARASITES IN THE MOSQUITO VECTOR: ROLE OF THE INSECT IMMUNE SYSTEM**

M. Whitten, M. Fraiture, S. Blandin, S. H. Shiao, S. Wyder, J.A. Hoffmann and  
**E.A. Levashina,**

UPR9022 du CNRS, group AVENIR - Inserm, Institut de Biologie Moleculaire et Cellulaire (IBMC), Strasbourg 67084, France

Development of malaria parasites in the mosquito represents a remarkable model for the study of immune responses of the vector and the survival strategies of *Plasmodium*. The parasite load is kept low by *Anopheles*, but how this is achieved is poorly understood at the molecular level. We identified a mosquito hemocyte-specific complement-like protein, TEP1, and showed that it is required to contain parasite development in the mosquito midgut. Using expressional profiling of loss- and gain-of-function *TEP1* transgenic mosquitoes and functional gene analysis by dsRNA silencing, we identified new genes, which are involved in parasite killing and clearance. Our data point to an important role of mosquito blood cells in orchestrating immune responses in the midgut epithelium. Using RNAi functional analysis and specific markers for blood and midgut cells, we are dissecting blood cell signaling pathways activated by parasite infection and follow the responses of the midgut cells that result in parasite killing.

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