Research Molecular Parasitology 2022

Publications

Balard A, Heitlinger E (2022). Shifting focus from resistance to disease tolerance: A review on hybrid house mice. **Ecol Evol** 12: e8889 [Review]

Benesh DP, Chubb JC, Parker GA (2022) Adaptive division of growth and development between hosts in helminths with two-host life cycles. **Evol** 76: 1971-1985.

Benesh DP, Chubb JC, Lafferty KD, Parker GA (2022) Complex life-cycles in trophically transmitted helminths: Do the benefits of increased growth and transmission outweigh generalism and complexity costs? **Curr Res Parasitol Vector-Borne Dis** 2: 100085.

Brendsma A, Hilmer C, Rauch M, Matuschewski K, Montagna GN (2022) *Plasmodium* early transcribed membrane proteins appear tailored to the host range of malaria parasites. **Int J Parasitol** 52: 135-143.

Ejotre I., Reeder D.M., Matuschewski K., Kityo, R., Schaer J (2022) Negative perception of bats, exacerbated by the SARS-CoV-2 pandemic, may hinder bat conservation in Northern Uganda. **Sustainability** 14: 16924.

Gabelich JA, Grützke J, Kirscht F, Popp O, Matz JM, Dittmar G, Rug M, Ingmundson A (2022) A member of the tryptophan-rich protein family is required for efficient sequestration of *Plasmodium berghei* schizonts. **PLoS Pathog** 18:e1010846.

Günther A, Hose M, Abberger H, Schumacher F, Veith Y, Kleuser B, Matuschewski K, Lang KS, Gulbins E, Buer J, Westendorf AM, Hansen W (2022) The acid ceramidase/ceramide axis controls parasitemia in *Plasmodium yoelii*-infected mice by regulating erythropoiesis. **Elife** 11: e77975.

Hildebrand F, Ankarklev J, Matuschewski K. Delineating *Plasmodium* liver infection across space and time. **Trends Parasitol,** *in press*. [Review]

Jarquín-Díaz VH, Balard A, Ferreira SCM, Mittné V, Murata JM, Heitlinger E (2022) DNA-based quantification and counting of transmission stages provides different but complementary parasite load estimates: an example from rodent coccidia (*Eimeria*). **Parasit Vectors** 15: 45

Kamani J, Atuman Y, Oche D, Shekaro A, Werb O, Ejotre I, Schaer J (2022). Molecular detection of *Trypanosoma* spp. and *Hepatocystis* parasite infections of bats in Northern Nigeria. **Parasitol** 149: 1460-1467.

Kamani J, Schaer J, Umar AG, Pilarshimwi JY, Bukar L, González-Miguel J, Harrus S (2022). Molecular detection and genetic characterization of *Anaplasma marginale* and *Anaplasma platys* in cattle in Nigeria. **Ticks Tick Borne Dis**. 13: 101955.

Kordes M, Ormond L, Rausch S, Matuschewski K, Hafalla JCR (2022) TLR9 signalling inhibits *Plasmodium* liver infection by macrophage activation. **Eur J Immunol** 52: 270-284.

Lucius R (2022) *Dicrocoelium dendriticum.* **Trends Parasitol** 38: 1089-1090. [Review]

Matuschewski K, Maier AG (2022) *Pas-de-deux*: African *Plasmodium falciparum* adaptations to sickle hemoglobin. **Trends Parasitol** 38: 267-268. [Review]

Midha A, Jarquín-Díaz VH, Ebner F, Löber U, Hayani R, Kundik A, Cardilli A, Heitlinger E, Forslund SK, Hartmann S (2022) Guts within guts: the microbiome of the intestinal helminth parasite *Ascaris suum* is derived but distinct from its host. **Microbiome** 10: 229.

Publications (cont.)

Phillips JA, Vargas-Soto JS, Pawar S, Koprivnika J, Benesh DP, Molnár PK (2022) The effects of phylogeny, habitat and host characteristics on the thermal sensitivity of helminth development. **Proc Royal Soc B** 289: 20211878.

Salama DB, Fereig RM, Abdelbaky HH, Shahat MS, Arafa WM, Aboelhadid SM, Mohamed AEA, Metwally S, Abas O, Suo X, Gupta N, Frey CF (2022) *Toxoplasma gondii* and *Neospora caninum* antibodies in dogs and cats from Egypt and risk factor analysis. **Pathogens** 11: 1464

Vo KC, Ruga L, Psathaki OE, Franzkoch R, Distler U, Tenzer S, Hensel M, Hegemann P, Gupta N (2022) Plasticity and therapeutic potential of cAMP and cGMP-specific phosphodiesterases in *Toxoplasma gondii.* **Comput Struct Biotechnol J** 20: 5775-5789.

Wang C, Liu L, Wang T, Liu, X, Peng W, Srivastav RK, Zhu XQ, Gupta N, Gasser RB, Hu M (2022) H11-induced immunoprotection is predominantly linked to N-glycan moieties during *Haemonchus contortus* infection. **Front Immunol** 13: 1034820.

Xia N, Guo X, Guo Q, Gupta N, Ji N, Shen B, Xiao L, Feng Y (2022) Metabolic flexibilities and vulnerabilities in the pentose phosphate pathway of the zoonotic pathogen *Toxoplasma gondii*. **PLoS Pathog** 18: e1010864.

Zhang H, Bednář L, Heitlinger E, Hartmann S, Rausch S (2022) Whip- and pinworm infections elicit contrasting effector and distinct regulatory responses in wild house mice. **Int J Parasitol** 52: 519-52

PhD theses

Fraser M. *Plasmodium falciparum* lipid metabolism as a target for malaria intervention strategies (PIs: A. Maier, K. Matuschewski)

Mukherjee P. Comparative analysis of gene expression associations between mammalian host and *Plasmodium*. (PIs: E. Heitlinger, G. Burgio)

Vo K.C. Plasticity and therapeutic potential of cAMP and cGMP-specific phosphodiesterases in *Toxoplasma gondii* (PI: N. Gupta)

MSc theses

Becker C. Characterisation of different stages of persistence in *in-vitro* cultures of the protozoan *Entamoeba gingivalis* (PI: T. Stach)

Bergmüller A. Meta-Analyse von klinischen Studien zu Malaria-Vakzinierungsstrategien in SubSahara-Afrika (PI: K. Matuschewski)

Bulathsinhala V. D. DNA-based quantification of parasite load compared to oocyst count in *Eimeria falciformis*-infected mice (PI: E. Heitlinger)

Cwiklinska I. The optogenetic regulation of cAMP in *Toxoplasma gondii* (PIs: N. Gupta, Ö. Günay-Esiyok)

Fechtig D. Genetic characterization of the *Plasmodium berghei* SERA3 protease (PI: K. Müller)

MSc theses (contin.)

Hong X. Phenotypic characterization of P4-type ATPases in *Toxoplasma gondii* (PI: N. Gupta)

Karimova K. Physiological characterization of cAMP signaling mediators in *Toxoplasma gondii* (PI: N. Gupta, Ö. Günay-Esiyok)

Kühnapfel C.-A. Comparative anatomical study of *Oikopleura labradoriensis* Lohmann, 1892 on the basis of preserved museum material. (PI: T. Stach)

Veith Y. Functional characterization of two candidate metabolite transporters in *P. falciparum* (PI: K. Matuschewski)

MSc projects

Bulathsinhala V D. Feasibility ananlysis of dual RNA sequencing in the genus *Eimeria*. (PI: E. Heitlinger)

Veith Y. Investigation of haemoparasites of the lacertid lizard *Lacerta agilis* from Berlin (PIs: B. Bannert, K. Müller)

Werb O. Molecular investigation of mitochondrial genomes of Haemosporida in bats (PI: J. Schaer)

BSc theses

Fobie K. Investigating iron uptake as a possible transmission blocking strategy in *Plasmodium* (PI: K. Matuschewski)

Hakveren M. E. Comparative anatomy of the endostyle of the deep sea larvacean *Bathochordaeus stygius* Garstang, 1937 (PI: T. Stach)

Harke A. Open observation data for species interactions: a proof-of concept using squirrels on the British Islands. (PIs: E. Heitlinger, A. Planillo)

Heinke F. Homologous and heterologous immunization with two different *Eimeria* species in house mouse. (PI: E. Heitlinger)

Kossmann C. The correlation between helminth infection in domestic horses in Germany and their age, sex, breed, and individual living conditions (PI: K. Matuschewski)

Krüger JJ. Relative intensity of faecal DNA and oocysts as a tool to assess the timing of *Eimeria* infections. (PI: E. Heitlinger)

Lehmann L.S. *In-vitro* adaptation and characterization of *Plasmodium falciparum* field isolates (PI: K. Matuschewski)

Lüdtke S. Comparative anatomy of the endostyle of *Oikopleura dioica* (PI: T. Stach)

Müller L.-M. Comparative anatomy of sensory cells of the deep-sea appendicularian *Bathochordaes stygius* (PI: T. Stach)

Schillo L. Behavioural manipulation of copepods by a tapeworm (*Schistocephalus solidus*): differences between parasite populations and the effect of predator kairomones (PI: D. Benesh)

BSc theses (contin.)

Voss L. Targeting host metabolic pathways to influence the *Plasmodium* liver infection stage (PI: A. Ingmundson)

Wende A. Parasitological studies on *Lacerta agilis* (sand lizard) from Berlin Lichterfelde Süd (PIs: B. Bannert, K. Müller)

Zemann B. Comparative anatomy of the brain of the deep sea appendicularian *Bathochordaeus stygius* Garstang, 1937 (PI: T. Stach)

BSc projects

Voss L. Microscopic and genetic investigations on growth and egress of late liver-stage *Plasmodium berghei* (PI: A. Ingmundson)