Publikationen 2015/2016

Dieses Verzeichnis enthält folgenden Referenzen zu Publikationen (sortiert nach Erscheinungsjahr und Autor):

Es befinden sich 18 Einträge in diesem Literaturverzeichnis:

S. Kenthirapalan, A. P. Waters, K. Matuschewski, and T. WA. Kooij (2016)

Functional profiles of orphan membrane transporters in the life cycle of the malaria parasite

Nature Communications, 7(10519):1-10.

Zusammenfassung:

Systematic experimental genetics analysis of Plasmodium orphan transport proteins. 35 candidate transporters were characterized by targeted gene deletion and phenotyping during the complete malaria parasite life cycle. This study revealed vital roles for aminophospholipid transport during blood infection, for heavy metal transport in gamete fertility, and for a major facilitator in liver stage maturation.

URL http://www.nature.com/ncomms/2016/160122/ncomms10519/full/ncomms10519.html

A. Kuchipudi, R. Arroyo-Olarte, F. Hoffmann, V. Brinkmann, and N. Gupta (2016)

Optogenetic monitoring identifies phosphatidylthreonine-regulated calcium homeostasis in Toxoplasma gondii

Microbial cell, 3(5):215-223.

Zusammenfassung:

Toxoplasma gondii is an obligate intracellular parasite, which in-flicts acute as well as chronic infections in a wide range of warm-blooded ver-tebrates. Our recent work has demonstrated the natural occurrence and au-tonomous synthesis of an exclusive lipid phosphatidylthreonine in T. gondii. Targeted gene disruption of phosphatidylthreonine synthase impairs the par-asite virulence due to unforeseen attenuation of the consecutive events of motility, egress and invasion. However, the underlying basis of such an intri-guing phenotype in the parasite mutant remains unknown. Using an optoge-netic sensor (gene-encoded calcium indicator, GCaMP6s), we show that loss of phosphatidylthreonine depletes calcium stores in intracellular tachyzoites, which leads to dysregulation of calcium release into the cytosol during the egress phase of the mutant. Consistently, the parasite motility and egress phenotypes in the mutant can be entirely restored by ionophore-induced mo-bilization of calcium. Collectively, our results suggest a novel regulatory func-tion of phosphatidylthreonine in calcium signaling of a prevalent parasitic protist. Moreover, our application of an optogenetic sensor to monitor sub-cellular calcium in a model intracellular pathogen exemplifies its wider utility to other entwined systems.

URL http://microbialcell.com/researcharticles/optogenetic-monitoring-identifies-phosphatidylthreonine-regulated-calcium-homeostasis-in-toxoplasma-gondii/

R.D. Arroyo-Olarte, J.F. Burrowers, A. Kuchipudi, J.B. Helms, A. Biswas, I.R. Dunay, R. Lucius, and N. Gupta (2015)

Phosphatidylthreonine and lipid-mediated control parasite virulence

PLoS Biol., 13(e1002288).

Zusammenfassung:

Lipids are essential constituents of the biological membranes. This work shows natural and abundant expression of an exclusive lipid phosphatidylthreonine (PtdThr) in Toxoplasma gondii. PtdThr is required for asexual growth and virulence of the parasite. A metabolically attenuated parasite mutant lacking PtdThr can protect the vaccinated mice against acute and yet-incurable chronic infection. This discovery demonstrates adaptive speciation of PtdThr from an otherwise conserved membrane lipid phosphatidylserine, and reveals PtdThr synthesis as a therapeutic drug target.

URL http://www.ncbi.nlm.nih.gov/pubmed/26565995

M. Blume, R. Nitzsche, U. Sternberg, M. Gerlic, S.L. Masters, N. Gupta, and M.J. McConville (2015)

Toxoplasma gondii gluconeogenic enzyme contributes to robust central carbon metabolism and is essential for replication and virulence

Cell Host Microbe, 18:210-20.

Zusammenfassung:

Expression of gluconeogenic enzymes is usually repressed when glucose is available. This work demonstrates that Toxoplasma gondii constitutively expresses fructose 1,6-bisphosphatase, a near-universal enzyme that drives gluconeogenesis under glucose-deprived condition. Unexpectedly, the parasite needs FBP to maintain its growth and virulence even in glucose-replete milieu, which typifies dependence of T. gondii on a futile metabolic cycling of glycolytic/gluconeogenic pathways. Such a mechanism may allow the parasite to rapidly adapt to nutrients in different host cells.

URL http://www.ncbi.nlm.nih.gov/pubmed/26269956

K. Braun, S. Kaul-Strehlow, E. Ullrich-Lüter, and T. Stach (2015)

Structure and ultrastructure of eyes of tornaria larvae of Glossobalanus marginatus

Org. Divers. Evol., 15:423-428.

URL http://link.springer.com/article/10.1007/s13127-015-0206-x

M. Ganter, Z. Rizopoulos, H. Schüler, and K. Matuschewski (2015)

Pivotal and distinct role for Plasmodium capping protein alpha during blood infection of the malaria parasite

Mol. Microbiol., 96:84-94.

Zusammenfassung:

First demonstration for a functional separation of the two subunits of actin capping protein in a parasitic eukaryotic cell.

URL http://www.ncbi.nlm.nih.gov/pubmed/25565321

S. Kaul-Strehlow, M. Urata, T. Minokawa, T. Stach, and A. Wanninger (2015)

Neurogenesis in directly and indirectly developing enteropneusts: of nets and cords

Org. Divers. Evol., 15:405-422.

URL http://www.ncbi.nlm.nih.gov/pubmed/26225120

J. Matz, C. Goosmann, V. Brinkmann, J. Grützke, A. Ingmundson, K. Matuschewski, and TWA. Kooij (2015)

The Plasmodium berghei translocon of exported proteins reveals spatiotemporal dynamics of tubular extensions

Sci. Rep., 5(12532).

Zusammenfassung:

Live cell imaging and correlative light and electron microscopy revealed Plasmodium –induced tubules extending into the infected red blood cell – a missing link of protein export and Plasmodium-induced erythrocyte makeover.

URL http://www.ncbi.nlm.nih.gov/pubmed/26219962

J. Matz, A. Ingmundson, JC. Nunes, W. Stenzel, K. Matuschewski, and TWA. Kooij (2015)

In vivo function of PTEX88 in malaria parasite sequestration and virulence

Eukaryot. Cell, 14:528-534.

Zusammenfassung:

First in vivo evidence for a role of a PTEX component in sequestration of Plasmodium-infected erythrocytes to peripheral tissues. Reduced sequestration leads to splenomegaly, an apparent trade-off for virulence attenuation.

URL http://www.ncbi.nlm.nih.gov/pubmed/25820521

GN. Montagna, A. Biswas, K. Hildner, K. Matuschewski, and IR. Dunay (2015)

Batf3 deficiency proves the pivotal role of CD8α+ dendritic cells in protection induced by vaccination with attenuated Plasmodium sporozoites

Parasite Immunol., 37:533-543.

Zusammenfassung:

Experimental evidence for the central roles of dendritic cells in sterile protection elicited by whole Plasmodium sporozoite vaccination.

URL http://www.ncbi.nlm.nih.gov/pubmed/2628473

R. Nitzsche, V. Zagoriy, R. Lucius, and N. Gupta (2015)

Metabolic cooperation of glucose and glutamine is essential for the lytic cycle of obligate intracellular parasite Toxoplasma gondii

J. Biol. Chem., in press.

Zusammenfassung:

Asexual reproduction of Toxoplasma gondii in its mammalian host cells necessitates biogenesis of significant energy and biomass. This work shows that Toxoplasma can utilize glucose, glutamine and acetate in a cooperative manner to meet the bioenergetic demands required during its lytic cycle. Such a metabolic cooperativity in the parasite's carbon flux enables growth-and-survival trade-off in assorted nutrient milieus that may underlie promiscuous survival of T. gondii in diverse host cells. The work also indicates a previously unappreciated convergence of parasite metabolism with cancer cells.

URL http://www.ncbi.nlm.nih.gov/pubmed/26518878

R.D. Arroyo-Olarte, J.F. Burrowers, A. Kuchipudi, J.B. Helms, A. Biswas, I.R. Dunay, R. Lucius, and N. Gupta (2015)

Phosphatidylthreonine and lipid-mediated control parasite virulence

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URL http://www.ncbi.nlm.nih.gov/pubmed/26565995

R. Pennati, F. Ficetola, R. Brunetti, F. Caicci, F. Gasparini, F. Griggio, A. Sato, T. Stach, S. Kaul-Strehlow, C. Gissi, and L. Manni (2015)

Morphological differences between larvae of the Ciona intestinalis species complex: hints for a valid taxonomic definition of distinct species

PLoS One, 10(e0122879).

URL http://www.ncbi.nlm.nih.gov/pubmed/25955391

W. Petersen, K. Matuschewski, and A. Ingmundson (2015)

Trafficking of the signature protein of intra-erythrocytic Plasmodium berghei-infected structures, IBIS1, to P. falciparum Maurer's clefts

Mol. Biochem. Parasitol., 200:25-29.

Zusammenfassung:

Transgenic expression shows that IBIS and Maurer's clefts are evolutionarily conserved parasite-induced structures in infected erythrocytes.

URL http://www.ncbi.nlm.nih.gov/pubmed/25956941

J. Schaer, DM. Reeder, ME. Vodzak, KJ. Olival, N. Weber, F. Mayer, K. Matuschewski, and SL. Perkins (2015)

Nycteria parasites of Afrotropical insectivorous bats

Parasitol., 45:375-384.

Zusammenfassung:

First survey and molecular phylogeny of Nycteria parasites from Afrotropical bats revealed signatures of ancient Nycteria-host congruence and highlights that parasite population expansion in the liver is sufficient for successful transmission cycles.

URL http://www.ncbi.nlm.nih.gov/pubmed/25765623

T. Stach (2015)

What's in a name?

J. Zool. Syst. Evol. Res., 53:185.

URL http://onlinelibrary.wiley.com/doi/10.1111/jzs.12105/abstract

T. Stach (2015)

Science behind, around, and after trees

BioScience, 65:118-119.

URL http://bioscience.oxfordjournals.org/content/65/2/118.extract

T. Stach and C. Anselmi (2015)

High-precision morphology: bifocal 4D-microscopy enables the comparison of detailed cell lineages of two chordate species separated for more than 525 million years

BMC Biology, (2015) 13(113):1-11.

Zusammenfassung:

In this article we describe the embryological development of a sea squirt in unprecedented detail. Sea squirts are tunicates, the sister taxon to vertebrates. We revealed the precise mitotic history, the timing, morphogenetic movements, and cell fate specifications. Because wild type sea squirt embryos are invested with extraembryonic membranes, this was possible only by using the innovative tool of bifocal 4D-microscopy. Comparison with another tunicate allowed us to draw detailed evolutionary inferences.

URL http://bmcbiol.biomedcentral.com/articles/10.1186/s12915-015-0218-1

Publikationen 2017

Dieses Verzeichnis enthält folgenden Referenzen zu Publikationen (sortiert nach Erscheinungsjahr und Autor):

In diesem Literaturverzeichnis befindet sich nur ein einziger Eintrag:

R. Arroyo-Olarte, J. Burrowers, A. Kuchipudi, J. Helms, A. Biswas, I. Dunay, R. Lucius, and N. Gupta (2015).

Phosphatidylthreonine and lipid-mediated control parasite virulence

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