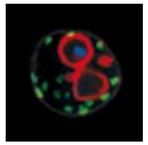
Scientific Report
2008/2009

BERNHARD NOCHT INSTITUTE FOR TROPICAL MEDICINE

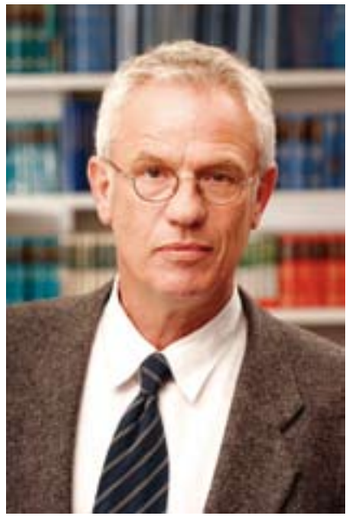
Bernhard Nocht Institute
for Tropical Medicine

An Institute of the
Leibniz Association



Cover picture:
Two malaria parasites inside a red cell: Parasites (red with blue nuclei) install new structures (green) in the host cell. (Image: Tobias Spielmann)

Preface



After more than a hundred years as a department of the Hamburg government, the institute was released into independence on January 1st, 2008 - the beginning of the reporting period. Since then it is a Foundation Under Public Law. Of course, it remains a member of the Leibniz Association, which unites research institutions of supraregional importance, and its funding continues to rely on a joint financing scheme of the Federal and State Governments. Important to note that the great strength of the institute to combine under one umbrella research, training and health care now is sustainably secured by the phrasing that "The mission of the Foundation is to perform research, teaching, continuing training and education as well as consultation and health care in the fields of infection and tropical medicine." Including infection medicine in general allows to address newly emerging infections as often requested by the public in cases – like SARS or swine flu – not being tropical diseases in the narrower sense.

As expected the transition from a government department to a foundation was not at all noticed by most colleagues. A notable change occurred at the directors´ floor only, instead of one Director there is now a Board holding weekly meetings, realizing after two years that all decisions had been taken unanimously. One year later supervision in the Hamburg administration was moved from the Ministry of Social and Family Affairs, Health and Consumer Protection (BSG) to the Ministry of Science and Research (BWF), a just as soft transition. State Secretary Bernd Reinert of BWF took over the chair of the Board of Trustees from State Secretary Dietrich Wersich of BSG, who would not have continued anyway because he meanwhile had become the Senator. For the first time, two external experts joined the Board of Trustees. The vote was for Helmuth Weisser, owner of the largest SME of the country – as he once called himself -, and Jörn Aldag, chairman of Hamburg´s most prominent biotech company Evotec. Also new were two representatives of the institute. The staff elected the scientist Prof. Iris Bruchhaus, doing an important service to the institute by serving as ombudsman, and chairman of works council Dirk Plähn.

Major parts of the administration and, in particular, of the Technical Department of the institute have been kept busy with the extension building. The capstone was laid in summer 2009, and inauguration was celebrated including speeches of the Federal Minister of Health and Hamburg´s First Mayor. Followed by laborious and time-consum-

ing customisings of electronic and mechanical control systems. Highest safety standards are taking their toll.

The directors drafted a development plan 2011/2012 for the institute. "Translation" is the word of the year. Reference to practical application is to be strengthened. More epidemiology to ensure that experimental research keeps track with changes of diseases, pathogens and environments, and more intervention studies to enable a rapid transfer of laboratory findings into health care. The additional emphasis must, however, not go at the expense of laboratory research because cellular and molecular biology form the basis for the international reputation of the institute and, according to the directors, hardly reach the "critical mass" required for sustainable excellence in science.

In order to acquire additional funding for "translational" research the institute was keen to foster collaborations with Hamburg University. Initially, the epidemiologists in 2008 participated in grant applications of the Asia-Africa Institutes in a national call on regional studies, i.e. studies on the peculiarities of certain regions of the world. Even greater engagement was dedicated to the Hamburg Excellence Initiative. Together with members of the Natural Sciences a proposal was drafted on medicinal drug development, and in addition, joint projects were designed with colleagues from the Humanities – addressing cultural, social and legal aspects of infectious diseases of global relevance and their control in the endemic areas. Unfortunately the initiatives were mostly unsuccessful. The major reason was the lack of joint preliminary work. It won´t be easy to establish this kind of co-operations without financial incentives.

Above all in 2008/2009 was the review of the institute by the Leibniz Association, which assesses every seven years whether or not an institute deserves the joint funding by the Federal and State budgets. The report, which had to be prepared for the reviewers, filled a large Leitz folder. The paper work by itself forces to look into every corner of the institute and to reconsider each detail of its organization. This alone justifies the exercise, many say. In November 2009 then the site visit of the reviewers. The spirit felt positive, and half a year later it was announced officially that the feeling was right.

The directors are indebted to all staff members for their extraordinary identification with the institute, which showed so nicely during the reviewers´ site visit. Particular credit goes to our colleagues who engage themselves in the many bodies of the institute´s self-administration, just to mention the works council and the numerous committees. We are grateful to all our supporters in the Hamburg State administration and the Federal Ministry of Health, most of all Senator Dietrich Wersich and subsequently State Secretary Bernd Reinert, Chairmen of the Board of Trustees, who always served the institute with great prudence and sense of responsibility. Special thanks go to the members of the Scientific Advisory Board, in particular the chairperson Prof. Silvia Bulfone-Paus, who spent their valuable time to familiarize with our scientific challenges and to help us with expert advice.

Last but not least we are most grateful to all members of the "Friends of the Tropical Institute" association for their continuous support.

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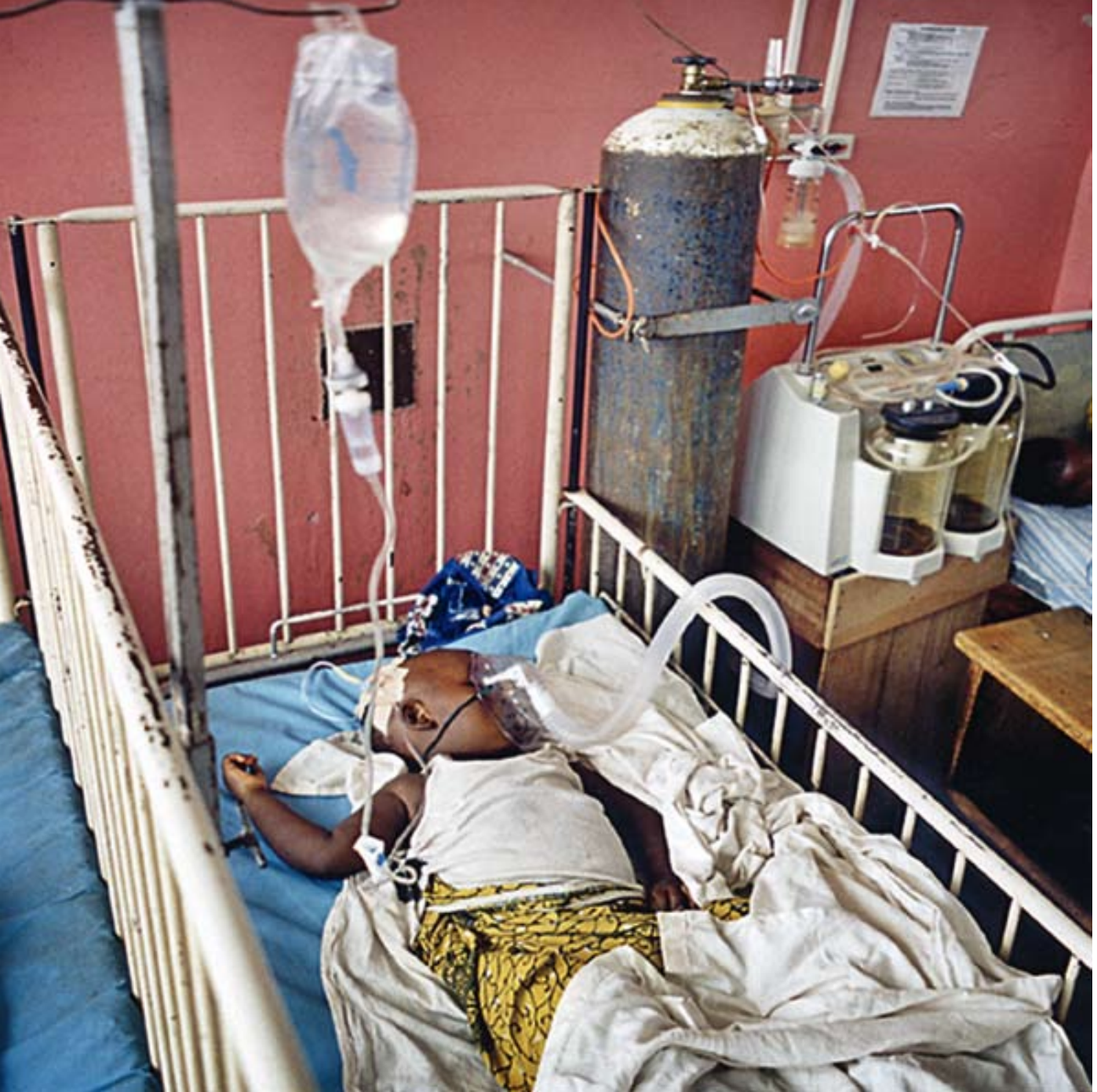
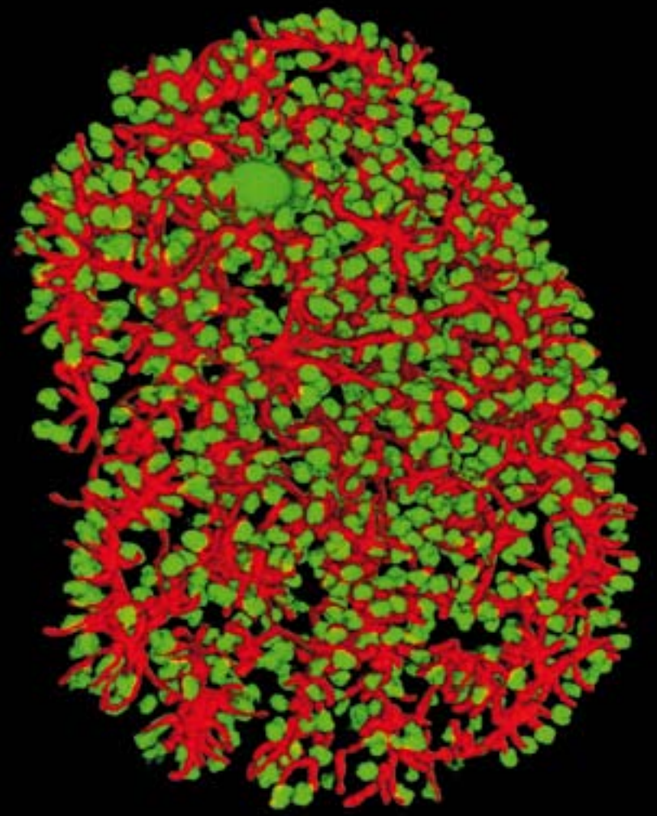


MALARIA

An estimated 500 million humans suffer from malaria each year, one million die from it, most of them African infants. Since decades there is an ongoing race between the development of new drugs and drug resistance by the parasites. A vaccine is needed to control the disease effectively because health care is insufficient in most malaria areas and many victims do not get to the doctor in due time. Recently it was found that a new vaccine reduces the number of malaria episodes of babies by half. The degree of protection surprised experts and cannot be explained immunologically. Therefore it is unknown how to further increase the efficiency.



Well organized avalanche

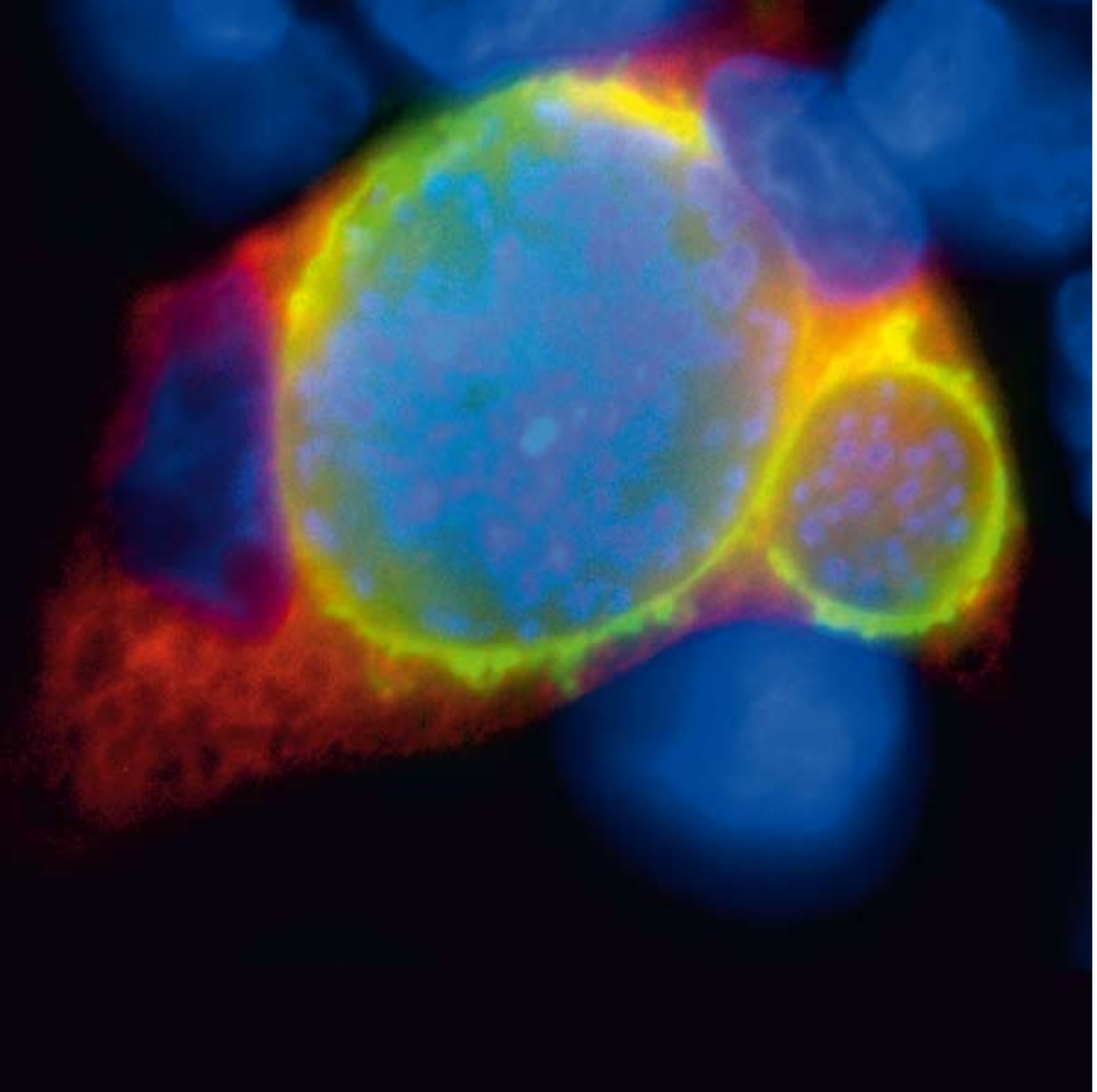
HOW MALARIA PARASITES MULTIPLY INTENSELY IN A FEW DAYS

After a bite of an infected Anopheles mosquito, malaria parasites enter the blood vessels of our skin and rush to the liver. They infect liver cells and multiply inside into tens of thousands of daughter parasites. This happens in an obviously fine tuned and synchronized process: First the cellular organs (organelles) of the parasites sprout, the nuclei reduplicate many fold and finally the daughter parasites surround themselves with an own cell membrane.

Stanway R. et al., Nat Protoc 2009, 4:1433-9

Rebecca Stanway, Nancy Müller, Ulrike Froehlke, Anne MacDonald and Volker Heussler (Malaria I)

Figure: Development of nuclei (green) and mitochondria (red) from a single malaria parasite during intense multiplication inside a liver cell.



Foil suicide, plunder and dismantle

MALARIA PARASITES INHIBIT SUICIDE OF OUR LIVER CELLS

To protect us from pathogens which try to take possession of our cells, our cells have developed the ability to commit suicide. Accordingly, a massive multiplication of malaria parasites would be expected to cause the suicide of the infected liver cell. To prevent this, parasites flood the cell with a protein that inhibits certain enzymes, including those crucially involved in the regulation of the cell´s suicide. After the daughter parasites have multiplied massively, they dissolve the cell membrane of the mother parasite and move freely inside the liver cell before they cause the liver cell to release parts of the cell body (merosomes) to be carried away with the blood. Only in the streaming blood the daughter parasites are being released to then infect red blood cells.

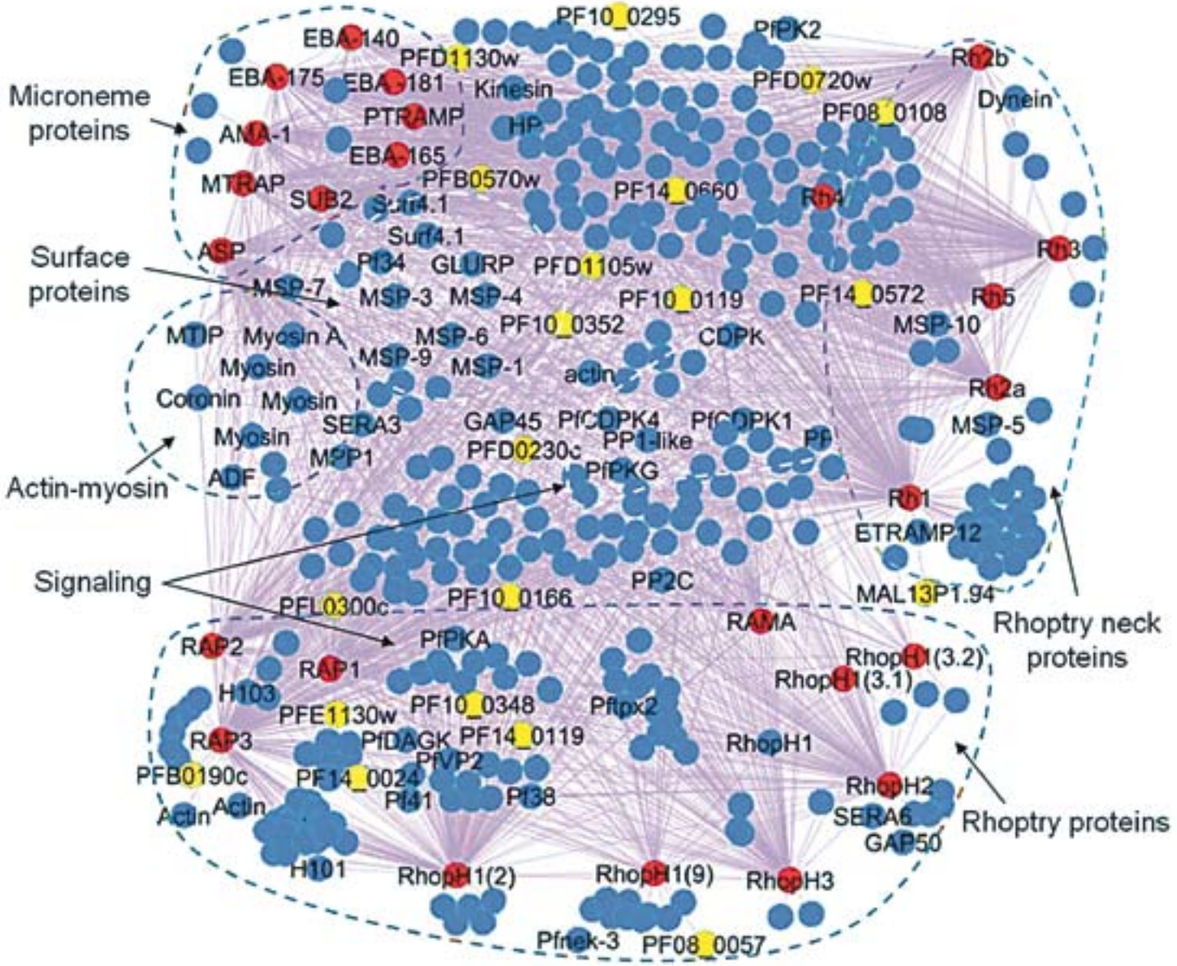
Rennenberg A. et al., PLoS Pathogens 2010, 6(3): e1000825

Rebecca Stanway, Christina Deschermeier, Kathleen Rankin, Annika Rennenberg, Andreas Nagel, Susanne Helm, Stefanie Gräwe, Christine Lehmann, Ulrike Froehlke, Anne MacDonald, Silke Retzlaff, Nancy Müller, Gerina Vollmers and Volker Heussler (Malaria I)

Figure: Parasite (green) releases inhibitor (red) into the liver cell; nuclei of liver cells and parasites are stained in blue.

PREDICTION OF THE FUNCTIONS OF UNKNOWN MALARIA PROTEINS

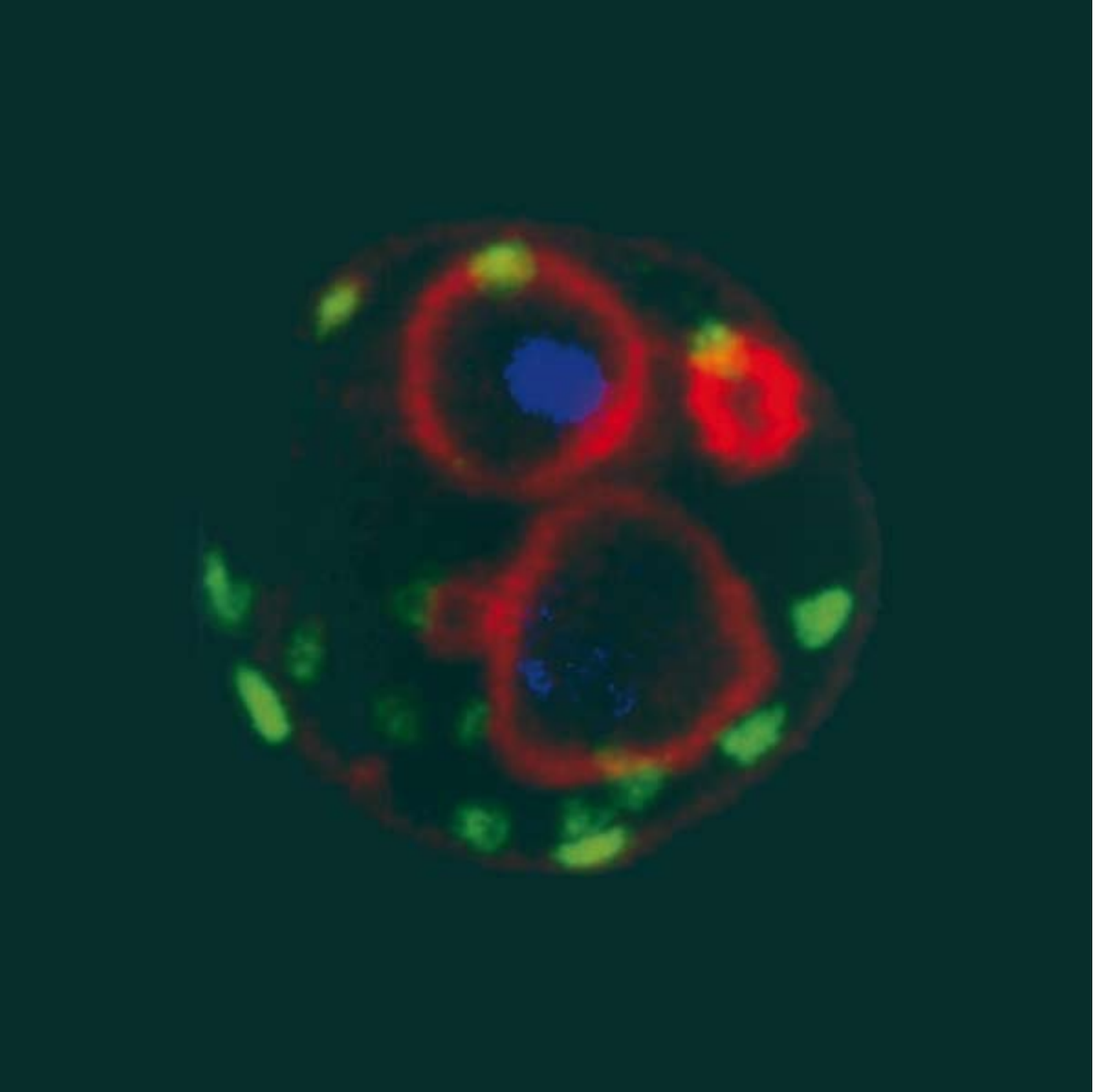
After multiplying inside liver cells malaria parasites infect red blood cells, and the symptoms of malaria set in. The parasite releases hundreds of proteins into the red blood cell and restructures the cell vigorously – an enormous effort of cellular biology. An estimated half of the proteins involved in invasion and restructuring are presently unknown. We have lined up with colleagues in Singapore to combine informatics, genetics and cell biology approaches to predict the functions of these unknown proteins. Our data have been displayed on a website which is frequently visited so that we believe our predictions have an impact on malaria research worldwide.



Hu G. et al., Nat Biotechnol. 2010, 28(1):91-8. Epub 2009 Dec 27

Ana Cabrera, Maya Kono, Silvia Haase, Klemens Engelberg, Tobias Spielmann and Tim Gilberger (Malaria II)

Figure: Description of functional protein networks: The interplay of 418 proteins of malaria parasites forms the initial step of an unfriendly occupation of our red blood cells. Yellow dots mark proteins newly characterized in the present study (Hu, Cabrera et al., 2009).



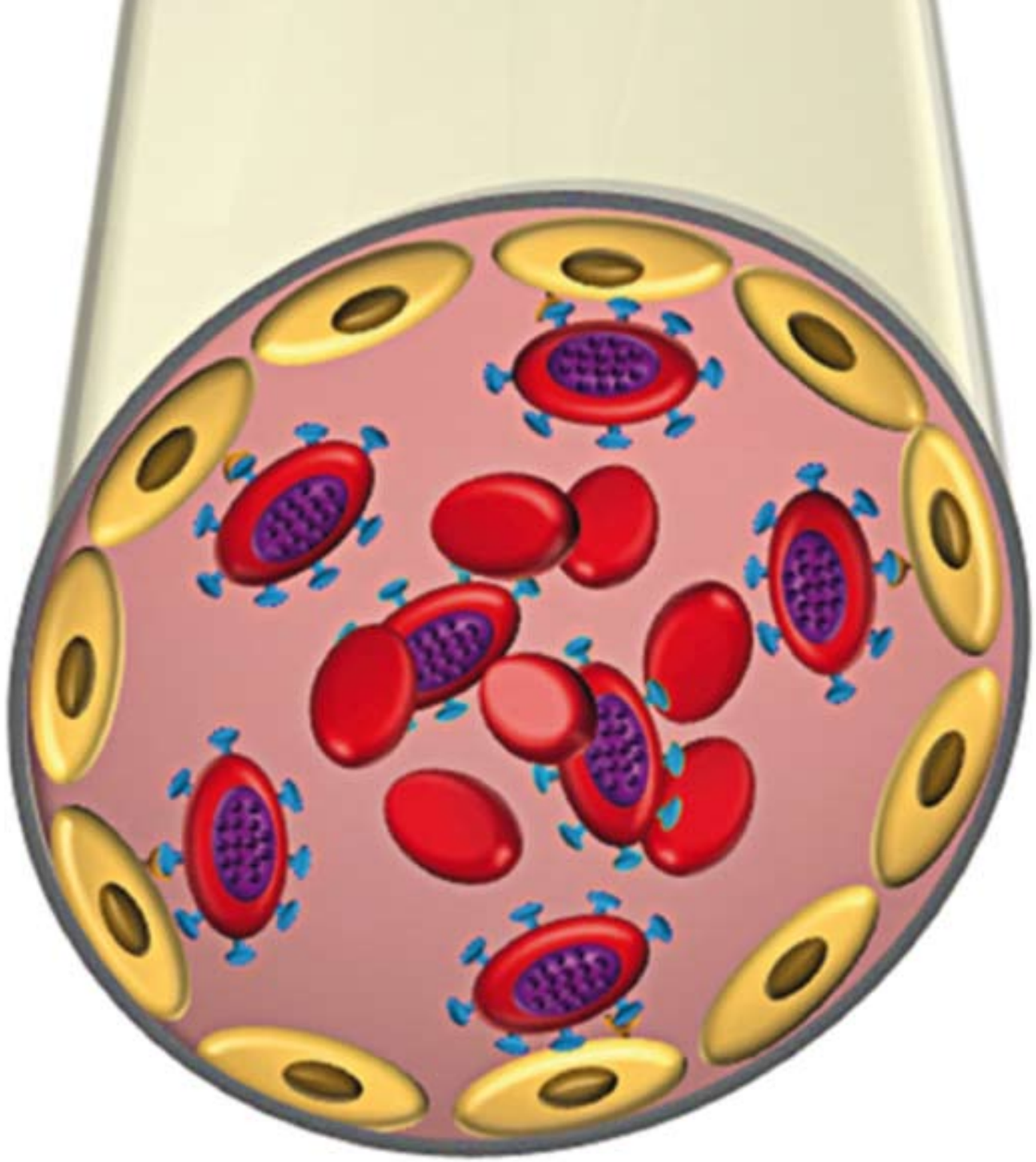
BUILDING INFRASTRUCTURE

Following invasion, malaria parasites introduce into red blood cells new structures and manage to transport proteins – trespassing three membranes – onto the surface of the red blood cells. We have collected a number of data on how the parasites make sure that their proteins reach the right compartment inside and at the surface of host cells.

Haase S. et al., Mol Microbiol 2009, 71:1003-17

Silvia Haase, Susann Herrmann, Christof Grüring, Arlett Heiber, Christine Langer, Moritz Treeck, Ana Cabrera, Caroline Bruns, Nicole Struck, Maya Kono, Klemens Engelberg, Ulrike Ruch and Tim-Wolf Gilberger, Tobias Spielmann (Malaria II)

Figure: Two malaria parasites inside a red cell: Parasites (red with blue nuclei) install new structures (green) in the host cell.



Cadenced

WITH EACH MULTIPLICATION STEP MALARIA PARASITES EXCHANGE SURFACE PROTEINS

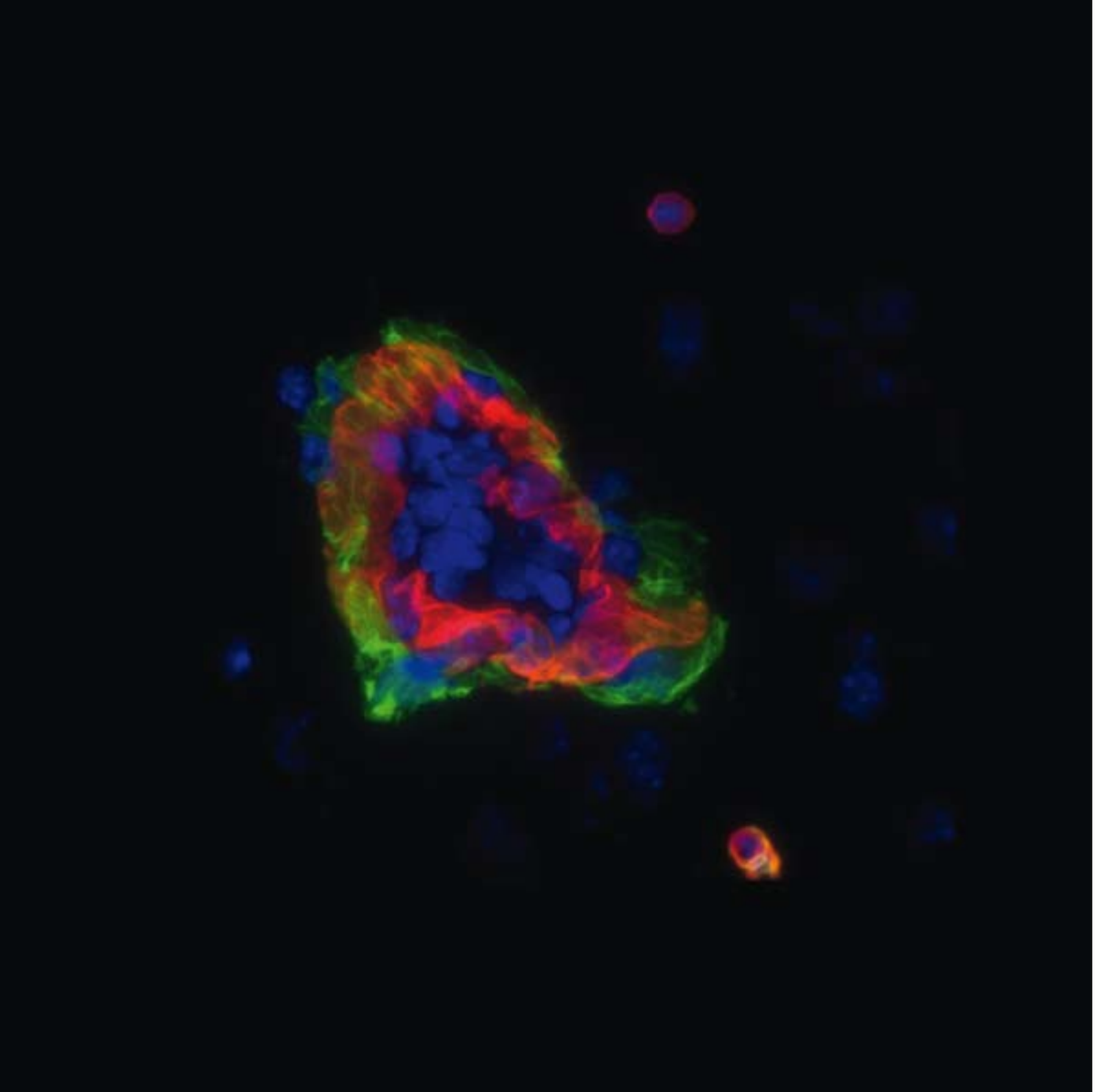
Malaria parasites transport their own proteins onto the surface of infected red blood cells to make the cells stick to the walls of small blood vessels. This process is considered crucial for the development of cerebral malaria, the most dangerous form of the disease. The attachment to vessel walls results in microvascular disturbances in the brain and other organs causing organ failure. To escape the human antibodies that they elicit the parasites exchange their proteins on the red blood cells time and time again.

We have examined parasites freshly isolated from malaria patients and found that – unlike previously reported from studies on long-term cultured parasites – each generation of parasites replaces these surface proteins and nearly all individual parasites of one generation produce the same protein. Presently we try to understand the replacement mechanism and to learn about the structure of these proteins to provide a basis for the development of a vaccine against life-threatening malaria complications.

Bachmann A. et al., PLoS One 2009, 4:7459

Iris Bruchhaus, Anna Bachmann, Sabine Predehl and Egbert Tannich (Molecular Parasitology)

Figure: Red blood cells infected with malaria parasites carry new surface proteins and bind to cells of the vessel wall.



Too much of a good thing?

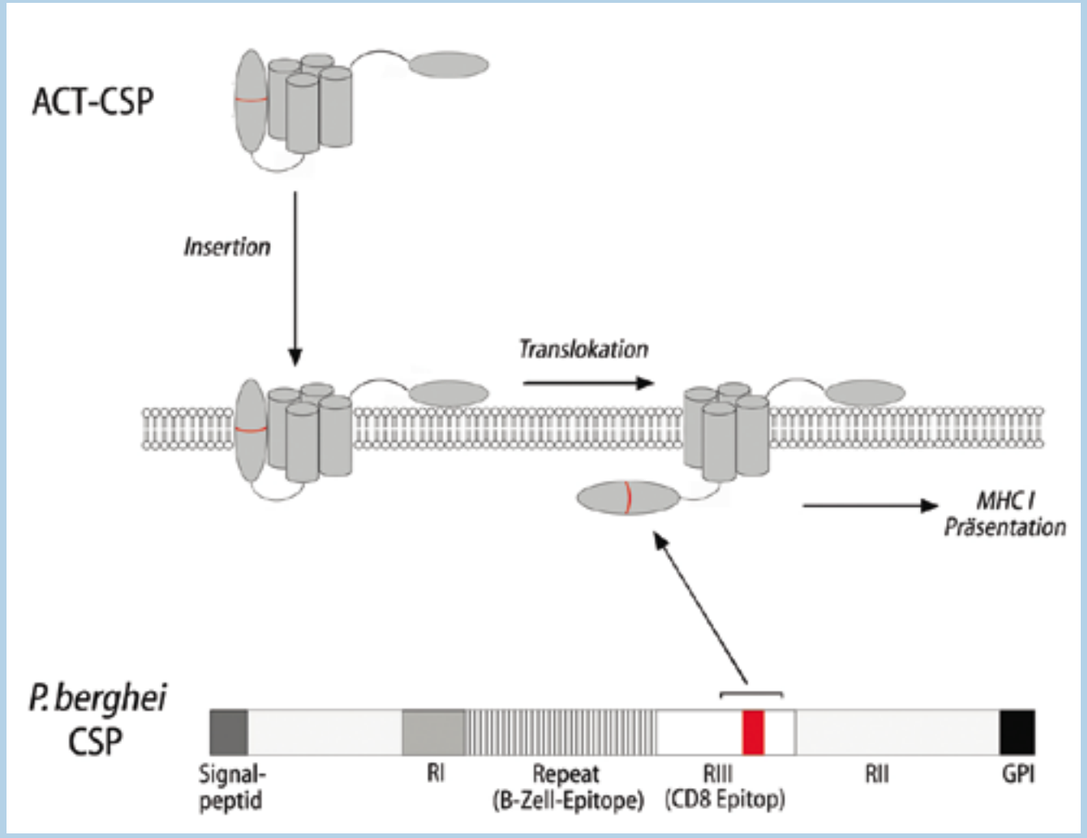
BLOCKING OF IMMUNE CELLS PREVENTS FATAL MALARIA IN MICE

Immune cells can defeat pathogens but the inflammation this may cause can be harmful. This apparently holds true for malaria, at least for mouse malaria, which serves as a model for the life-threatening form of human malaria. T lymphocytes are immune cells that become specifically trained to fight against a given pathogen. We have shown that malaria-infected mice show substantially less inflammation of the brain and the liver if T lymphocytes are blocked. It remains to be shown whether similar damage may be caused by these cells in human malaria.

Steeg C. et al., Immunol. 2009, 183:7014-22

Christiane Steeg, Guido Adler, Iris Gaworski, Bernhard Fleischer and Thomas Jacobs (Immunology)

Figure: Brain of a mouse with cerebral malaria: Section of a small blood vessel containing numerous inflammatory cells.



MOLECULAR NEEDLES FROM SALMONELLA AND WHOOPING COUGH BACTERIA

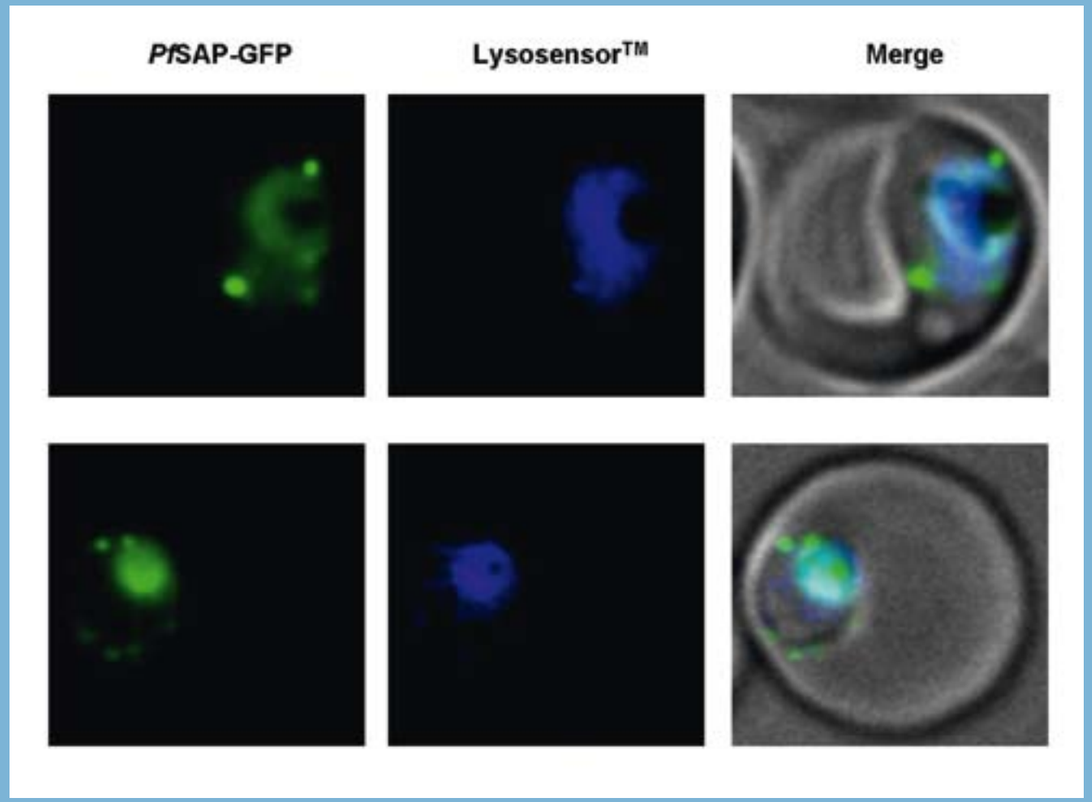
Certain T lymphocytes recognize from the outside whether other cells are infected in the inside, and are able to kill such cells. This also affects liver cells infected by malaria parasites. The T lymphocytes must, however, learn this kind of killing for each type of pathogen specifically, which each time takes one to two weeks. Vaccinations are meant to provide this form of training beforehand.

CSP is a protein which is released by malaria parasites in infected liver cells and which as the RTS`S vaccine has reached a protection rate of 50% in African children. In the mouse malaria model, we have tried to further improve the vaccine by channeling CSP inside the cells. We have applied two methods: For the first vaccination we have genetically introduced CSP into harmless bacteria which are able to inject CSP through a tiny channel into the mouse cells. For the second vaccination we used the poison of whooping cough bacteria to inject CSP into the cells: The toxic part of the poison had genetically been replaced by CSP, the other part of the poison as usual opened like a jackknife and instead of the toxin shifted CSP through the cell membrane. The twofold introduction of CSP into mouse cells in our experiments has increased the protection rate of CSP to 100%.

Tartz S. et al., Vaccine 2008, 26: 5935-43

Susanne Tartz, Bernhard Fleischer and Thomas Jacobs (Immunology)

Figure: A fragment of CSP protein of the malaria parasite *Plasmodium berghei* is injected into mouse cells by an ACT-CSP vaccine construct.



RATIONAL DRUG DESIGN

Malaria parasites - but also bacteria - have metabolic pathways that are absent in humans or different from those in humans. These are attractive drug targets because chemical compounds that block them would not affect our metabolism. We focus on the biosynthesis of polyamines and on pathogen-specific enzymes synthesizing vitamins B6 and B1 as well as on a secreted phosphatase that is used by the parasite to acquire nutrients from the host cell. Key enzymes of vitamin synthesis in plasmodia and staphylococci are evaluated for rational drug development by cell biological studies as well as by crystal structure analyses (in collaboration with EMBL and UniHH) for their potential as new strategies to combat the pathogens. Furthermore, by applying a high-throughput drug screen (in collaboration with the European ScreeningPort) we identified compounds inhibiting the respective enzymes as well as the pathogen's growth. Such lead compounds will be further improved in structure and activity to develop a new drug.

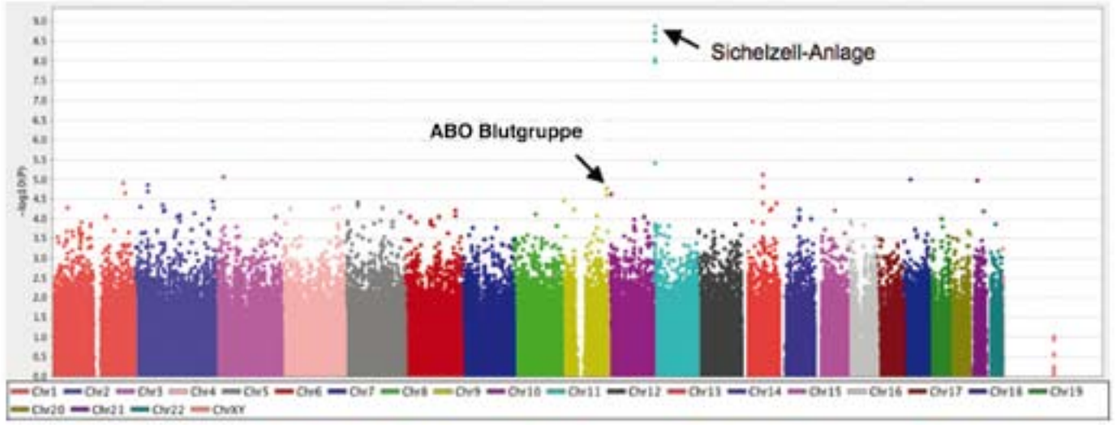
Müller I.B. et al., PLoS ONE 2009, 4:e4406

Carsten Wrenger, Ingrid. B. Müller, Julia Knöckel, Bärbel Bergmann and Rolf D. Walter (Biochemical Parasitology)

Figure: Intracellular transport of a phosphatase (GFP) via the cell surface into the food vacuole (LysosensorTM) of the parasite, images superimposed (Merge). (Image: Ingrid B. Müller)

GENETIC EPIDEMIOLOGY

Numerous mutations in our genomes make us differ from each other not only the way we look but also the way our body functions. Such genetic differences can be used to find out which functions of our body can contribute to resistance to an infectious disease. For example, if a mutation is clearly found more frequently among healthy persons than among patients with a certain disease, one can conclude that this or a nearby mutation protects against the disease under study and that the gene to which it belongs has a function in protecting against the disease. Meanwhile it is known that the courses of infections are particularly prone to influences by host genetics albeit by many mutations with weak effects each. Therefore, these mutations can only be found by studying large groups of patients and controls, but independent of the weakness of their effects they can hint at entirely new ways of treatment and prevention.



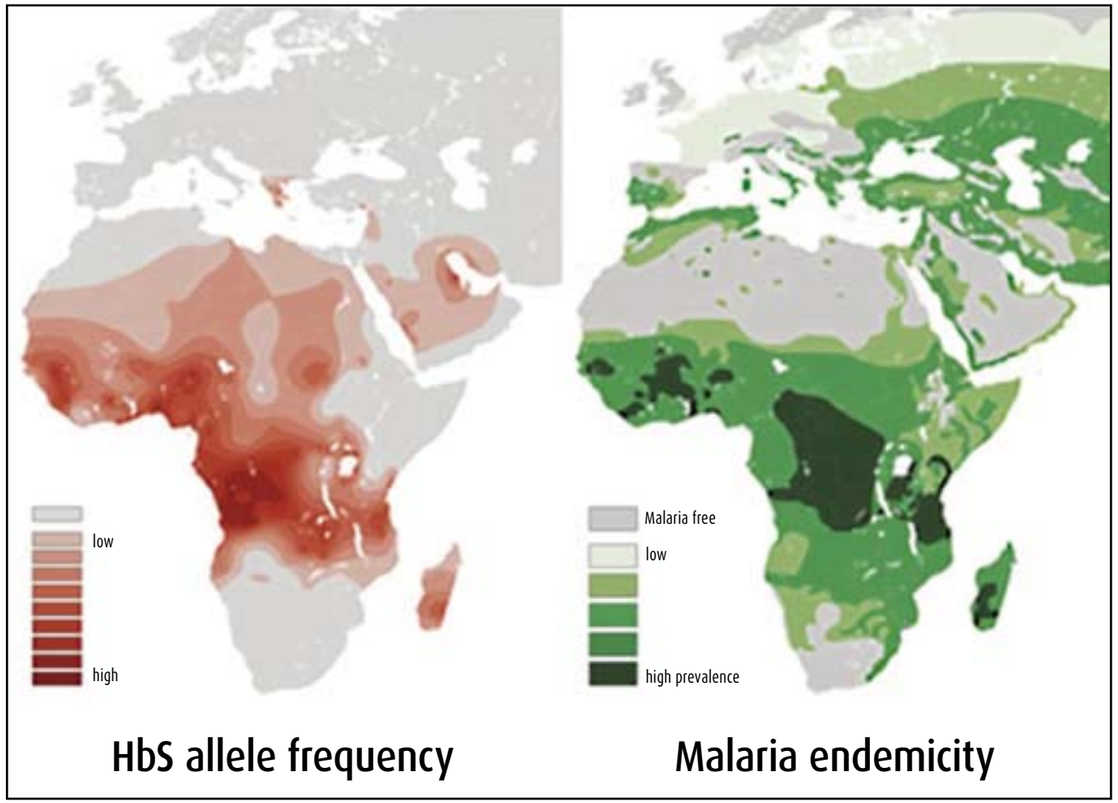
THE SEARCH FOR NATURAL PROTECTION AGAINST MALARIA

Genome-wide scans for mutations and genes which influence susceptibility and resistance to diseases are laborious. But they allow a systematic analysis that is not based on the present state of scientific knowledge and therefore is independent of incidental historical developments in science. In an international consortium we have performed such a study including thousands of children with life-threatening malaria and healthy counterparts. Besides confirming the unique protective effect of the sickle-cell trait – see page 37 – and an influence of blood group O we found an additional gene and a chromosomal region for gene regulation with as yet unknown functions in malaria protection. As in other genome-wide searches it has become apparent that many undetected mutations must exist which substantially contribute to the manifestation of disease, further extensions of the study groups and refinements of genetic markers are needed to once get the full picture of human genetic influences on the course of malaria.

Timmann C. et al., Genomic Epidemiology of Malaria 2010, Wellcome Trust Genome Campus, Hinxton, UK

Christian Timmann, Michael Brendel, Jennifer Evans, Jürgen May, Thorsten Thye, Wibke Loag, Ulrike Herzog and Rolf Horstmann (Molecular Medicine and Infection Epidemiology)

Figure: Genome-wide search for mutations that protect against severe malaria. The graph shows the location of nearly one million mutations in the human genome ordered chromosome by chromosome and for each of them the statistical significance of the difference between children with severe malaria and healthy ones. Confirmed signals indicating the mutations of the sickle-cell trait and the ABO blood groups are marked (Timman C. *et al.*).



natureCommunications|1:104|DOI:10.1038|incomms|www.nature.com/naturecommunications

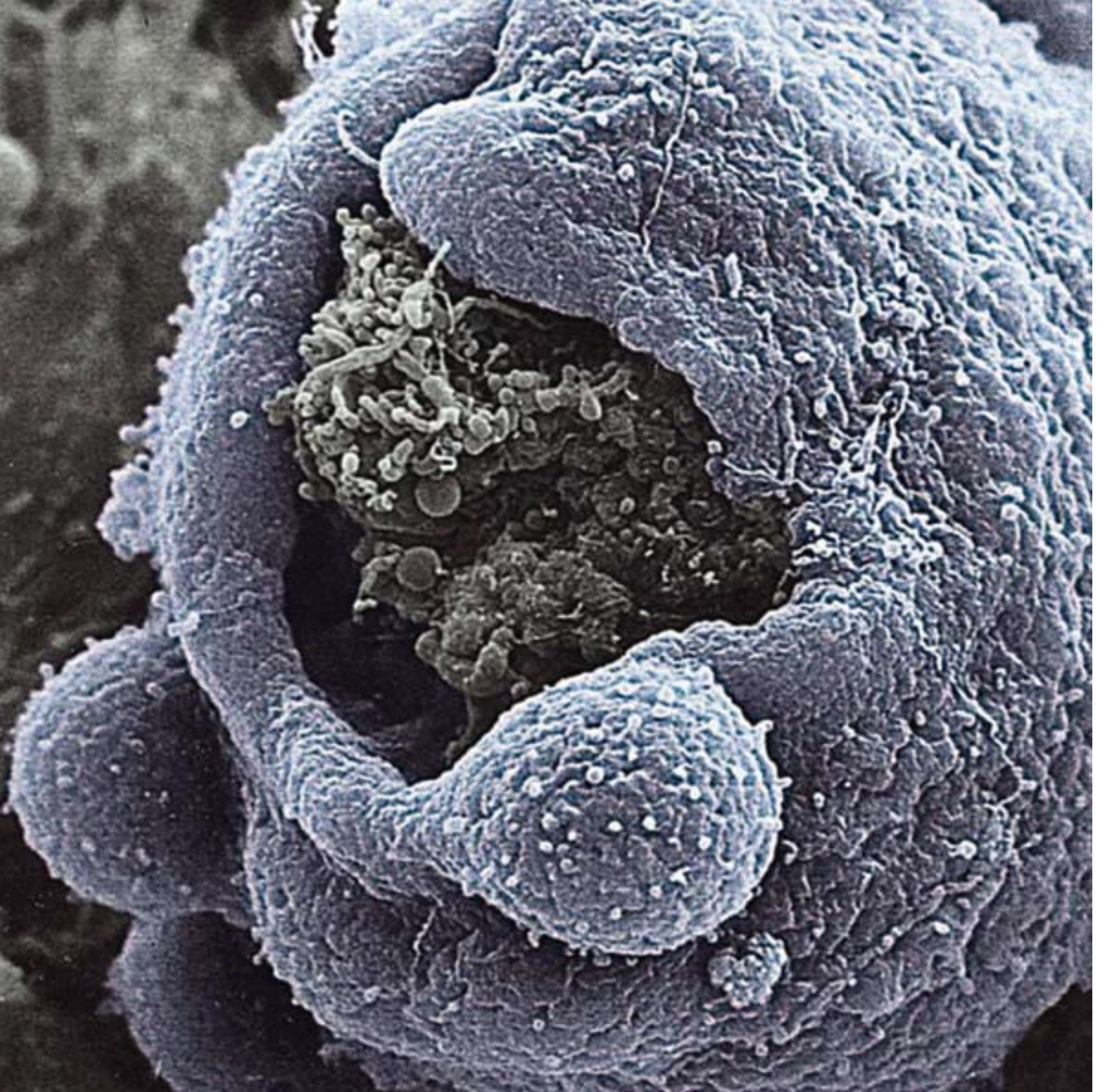
THE SICKLE-CELL TRAIT PROMOTES CHILD GROWTH IN MALARIA ENDEMIC AREAS

Sickle cell anaemia and the sickle cell trait are the paradigm of what is called ”balanced evolution“: While heterozygote carriers of the HbS variant of the beta-hemoglobin gene (sickle-cell trait, HbAS) are protected against severe malaria, individuals homozygous for HbS (sickle-cell anaemia, HbSS) have an increased childhood mortality. In a population, the disadvantage of the HbSS homozygotes is ”balanced“ by malaria protection of the HbAS heterozygotes.
The protective effect of HbAS against severe malaria is well known. By conducting a cohort study in a malaria-endemic area we found that children with HbAS were significantly protected not only against malaria but also against stunting. This observation closes an important gap in the reasoning of the ”balanced evolution“ theory.

Kreuels B. et al., Blood 2010, 22:4551-8

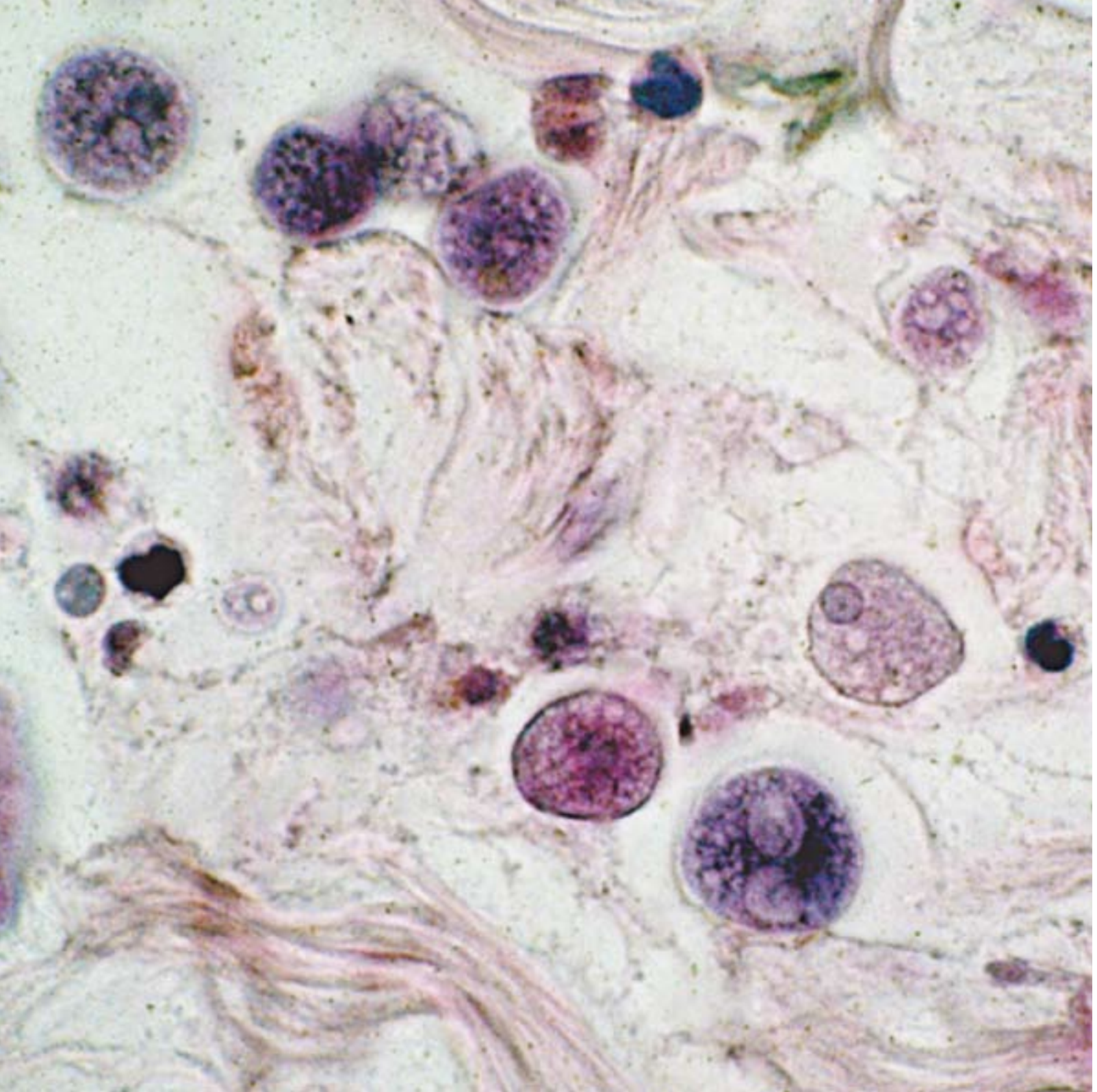
Samuel Adjei (Ghana)*, Benno Kreuels, Christina Kreuzberg*, Iris Langefeld*, Robin Kobbe*, Wibke Loag and Jürgen May (Infection Epidemiology, *staff member before 2008)

Figure: The distribution of sickle cell disease (left) and malaria (right) is similar because carriers of the sickle-cell trait have a better chance to survive malaria.



AMOEBIASIS

Amoebae *(Entamoeba histolytica)* are single-cell parasites which are endemic in most tropical and subtropical countries and which, after being ingested with contaminated food or water, dwell in the human colon. Interestingly, the vast majority of infected persons do not fall sick, only a small proportion of less than 10% do so, they develop bloody diarrhea (colitis) or large abscesses, mostly in the liver.



Spot them by the sugars

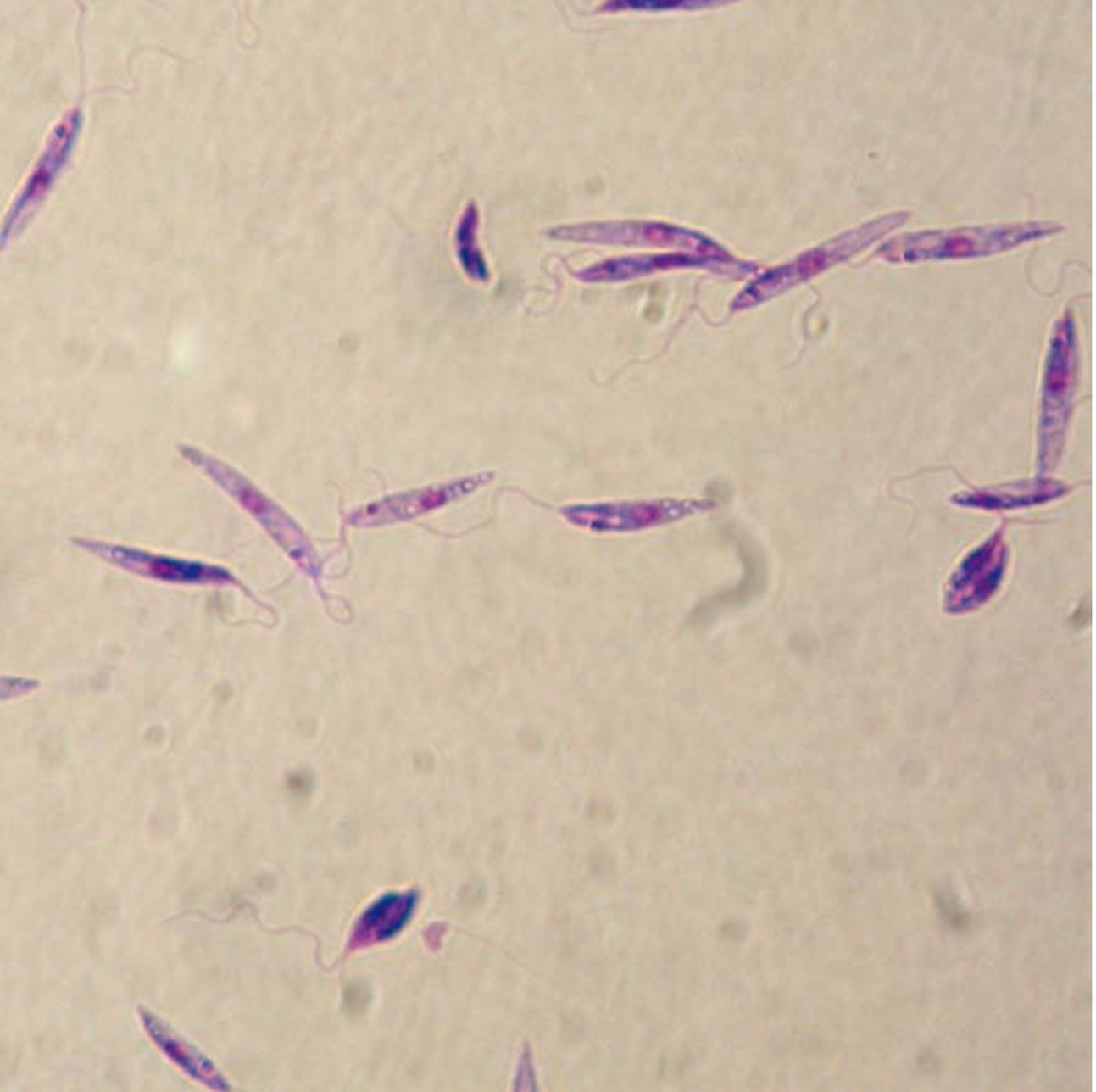
HOW AMOEBAE ARE RECOGNIZED AND KILLED BY IMMUNE CELLS

Studying mice we have found that amoebae, after leaving the intestinal tract and invading the tissue, may be recognized and killed by immune cells. Certain sugar structures (lipophosphoglycans) present on the amoeba surface are recognized by certain immune cells (NKT cells), which then stimulate other cells (macrophages) to kill the amoebae. Now we are trying to find out why this does not work in all humans infected with amoebae.

Lotter H. et al., PloS Pathog 2009, 5:e1000434

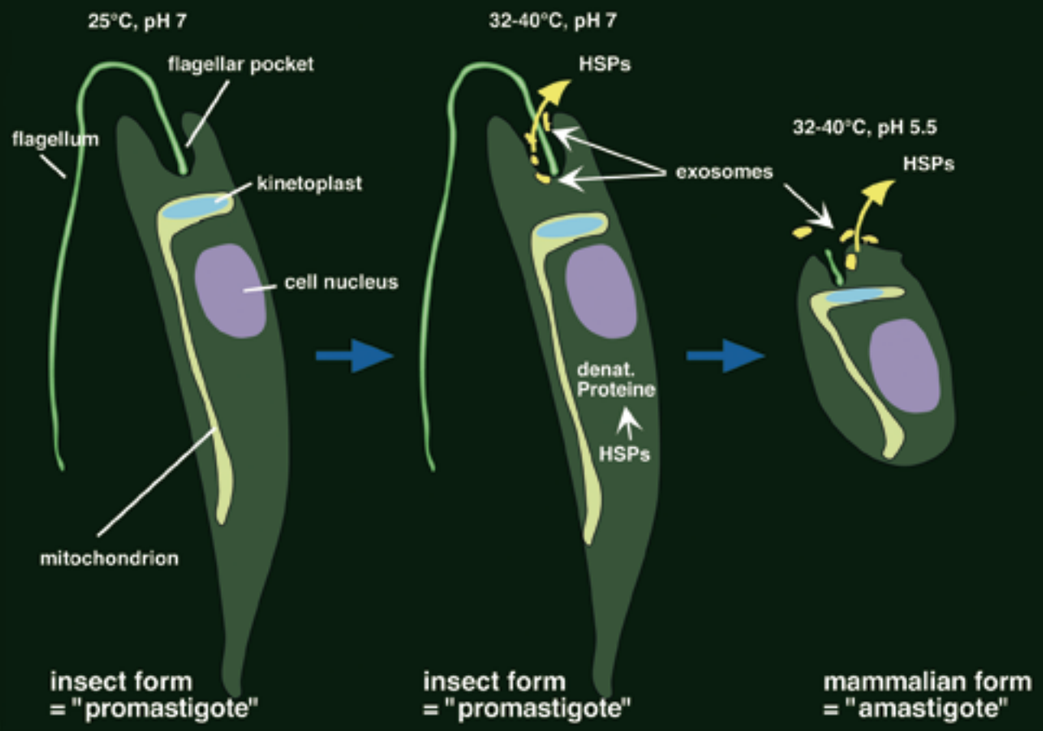
Hannelore Lotter, Nestor Gonzalez-Roldan, Claudia Marggraff and Egbert Tannich (Molecular Parasitology), Thomas Jacobs (Immunology), Otto Holst (Research Center Borstel)

Figure: Amoebae (purple) in human intestinal tissue (Image: Paul Racz).



LEISHMANIASES

Leishmania parasites are found in almost all tropical and subtropical regions of the world, and even in the Mediterranean. Humans are infected by the bite of sandflies. While most leishmaniae cause disfiguring boils at the site of entry in the skin, others migrate to the liver and spleen and cause life-threatening generalised infections. Treatment relies on chemotherapy and is hindered by growing drug resistance and severe side effects. There is no safe vaccine.



TEMPERATURE SIGNAL FOR CHANGE

During the transmission from sandflies to humans, leishmania parasites change their form and their metabolism to adapt to their new host. This impressive change is largely triggered by the different temperatures encountered in sandflies and humans and is mediated by so-called heat shock proteins. In the mammalian hosts, leishmaniae dwell inside immune cells. Recently, it was discovered that they release into the host cells small parts of their cell bodies, so-called exosomes, filled with parasite proteins. This process, too, requires several heat shock proteins. While the exact function of the exosomes and their payload is not yet understood, they influence the host's immune response for the parasite's benefit.
We have simplified the method to genetically engineer leishmaniae, and we are in the process of using this technique to unravel the function of heat shock proteins in the processes described above.

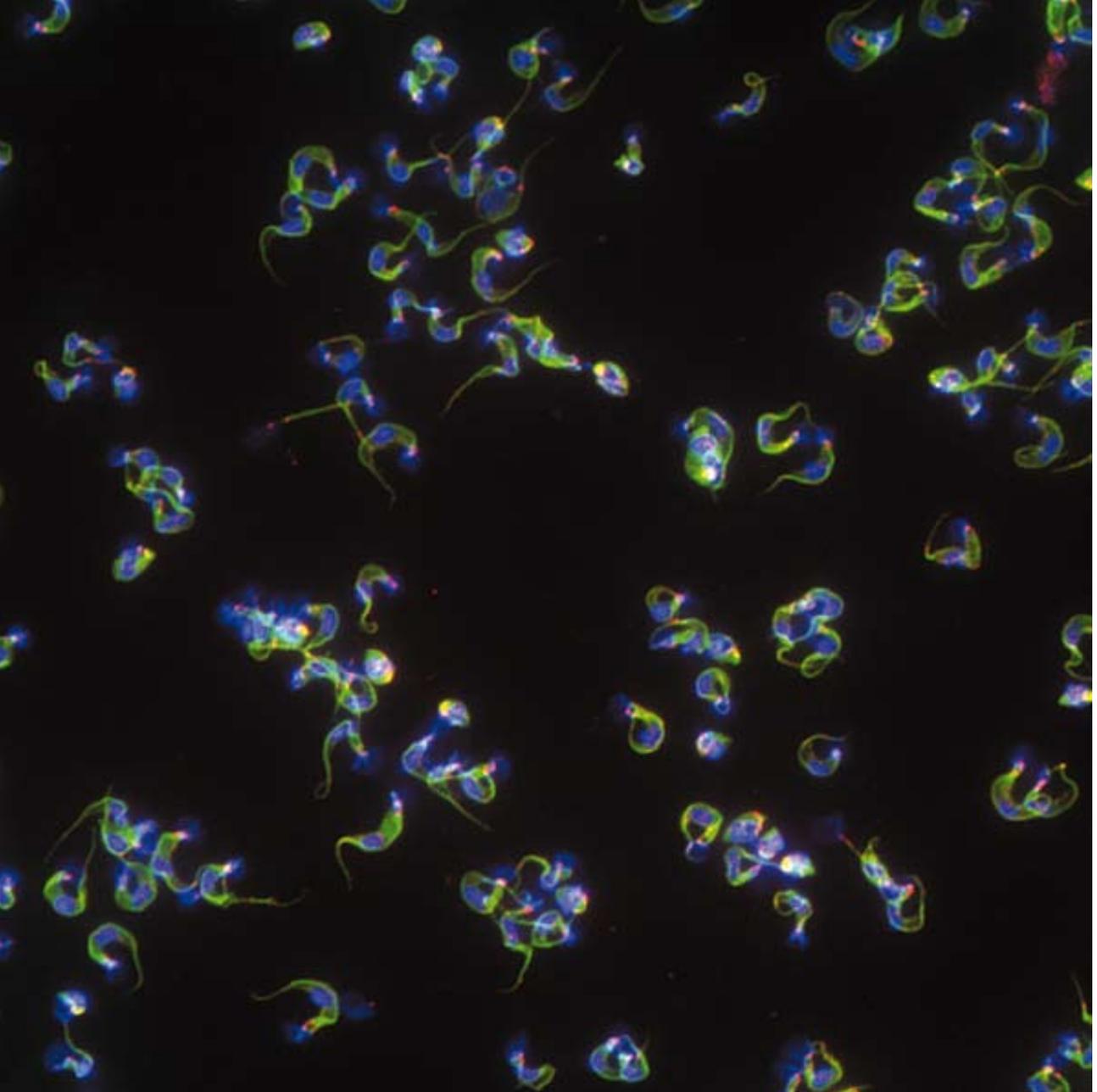
Silverman J. M. et al., J. Immunol. 2010, 185(g): 5011-5022

Gabi Ommen, Mareike Chrobak, Martina Wiesgigl, and Joachim Clos, (Leishmaniasis), Neil Reiner, Judith Maxwell Silverman (University of Vancouver)

Figure: A schematic model of Leishmania parasite stage conversion: Elevated temperature causes – through exosome-based export and binding to damaged proteins – a shortage of critical heat shock proteins (HSPs) and thus triggers the change towards the mammalian form.

CHAGAS DISEASE

Chagas-disease is exclusively found in Latin America. Characteristic symptoms are severe widenings of the heart, the oesophagus or the colon, which develop over several decades. The causative agent *Trypanosoma cruzi* is classically transmitted by blood sucking bugs and nowadays increasingly by blood transfusions. Drug treatment is unreliable and has severe side effects, and a vaccine is not available.



More than just camouflage

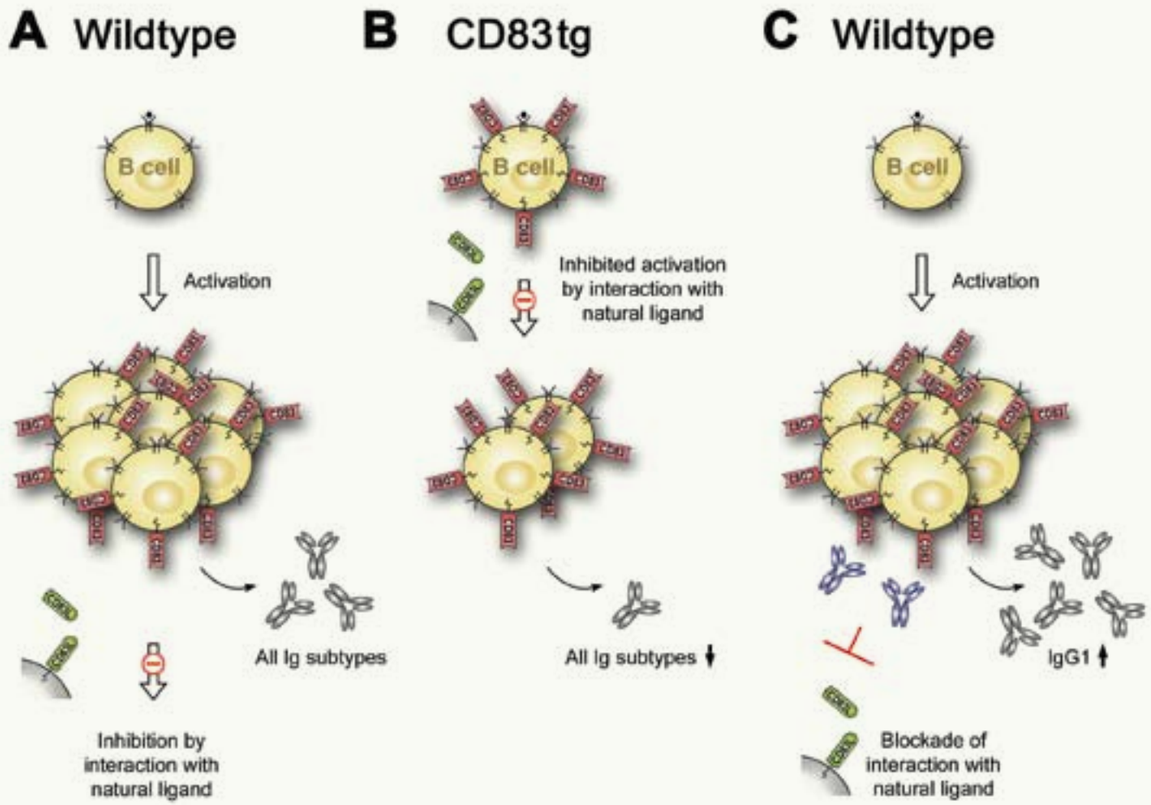
INHIBITION OF THE IMMUNE RESPONSE BY STOLEN SURFACE MOLECULES

All pathogens one way or the other manage to escape the host's immune defence. *Trypanosoma cruzi* cleaves certain carbohydrates (sialic acid) from human cells and transfers them onto their own surface, presumably to appear like human cells. This does not only impair the generation of antibodies. We found that the stolen sialic acid coat also binds to regulatory molecules (SIGLECS) on the surface of immune cells thereby preventing the release of Interleukin 12 – a soluble compound which plays a crucial role in the activation of immune responses.

Erdmann H. et al., Cell Microbiol 2009, 11:1600-11

Hanna Erdmann, Christiane Steeg, Bernhard Fleischer and Thomas Jacobs (Immunology)

Figure: Trypanosoma cruzi is able to infect almost any human cells and manages to remain undetected by the immune system for decades.



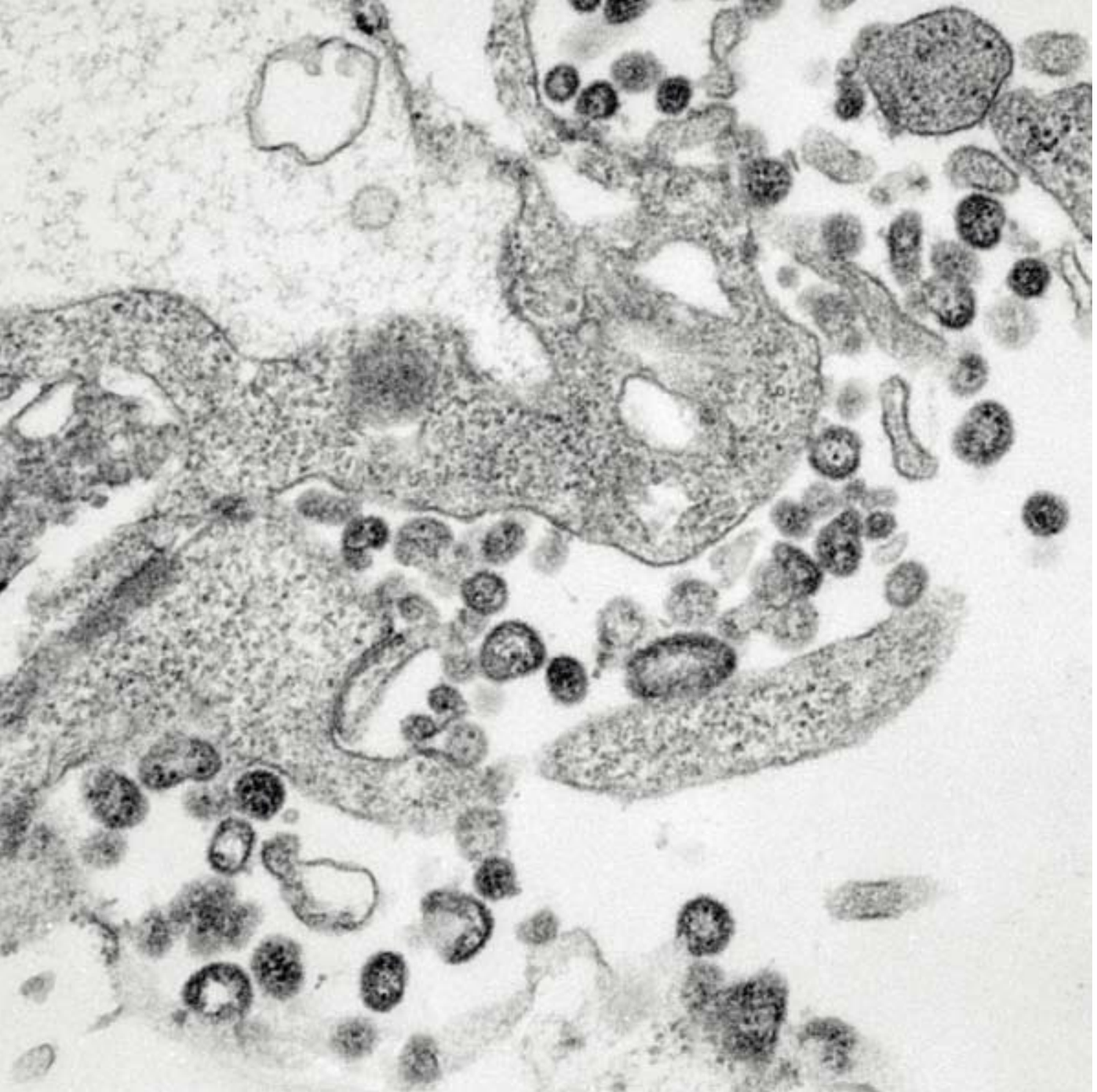
CONTROL OF ANTIBODY PRODUCTION

CD83 is a transmembrane glycoprotein that is expressed on the surface of many cells of the immune system upon activation. Investigating the function of this molecule we found that CD83 regulates antibody production by B lymphocytes and inhibits the over-activation of these cells. Mice that are genetically engineered to over-express CD83 produce drastically reduced amounts of antibodies of all subtypes while blockade of CD83 on B lymphocytes results in an enhanced production of antibodies. By manipulating the function of CD83 the effect of vaccines could be enhanced.

Kretschmer B. et al., J Immunol 2009, 182:2827-34

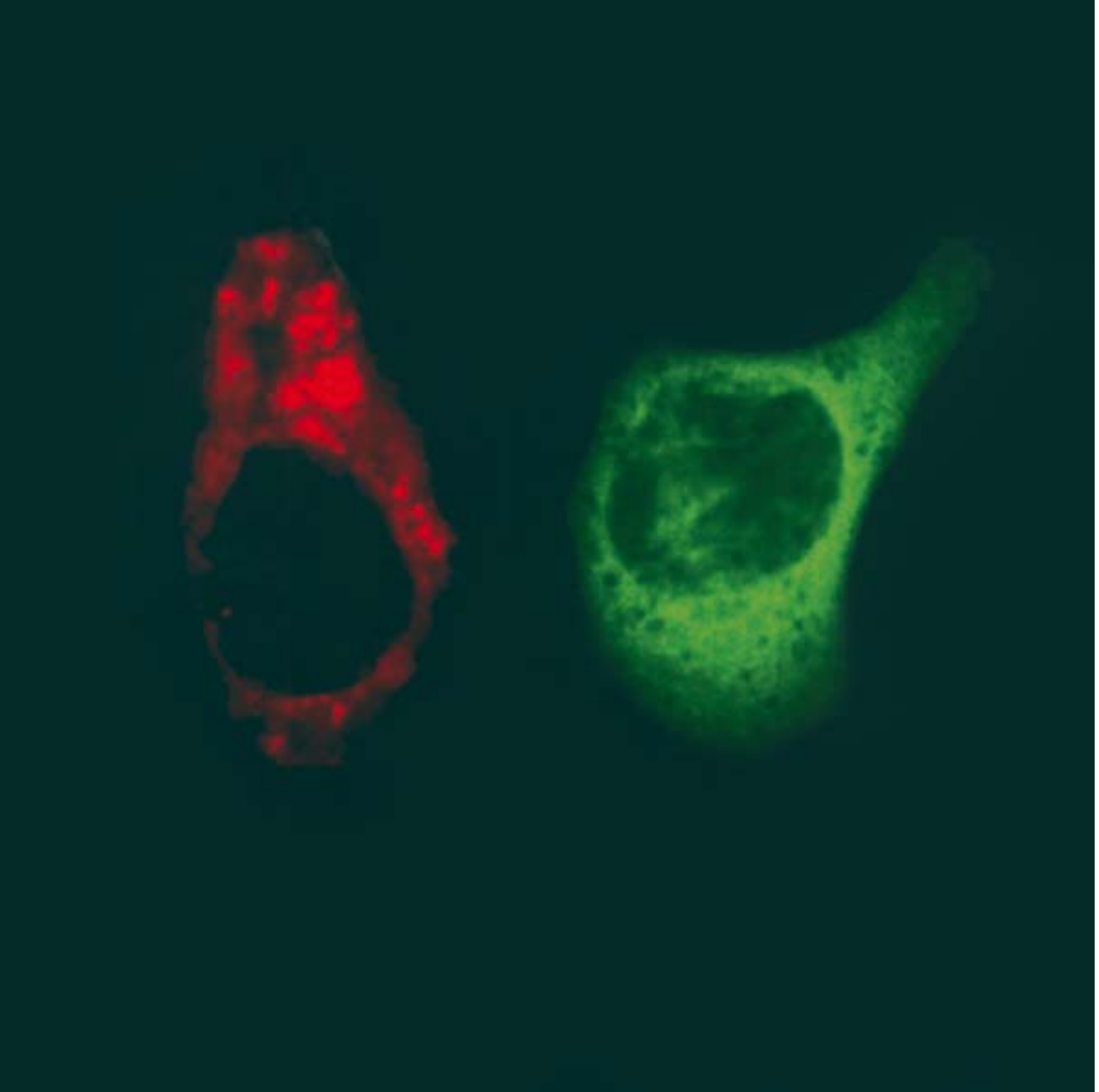
Birte Kretschmer, Katja Luethje, Svenja Ehrlich, Ulricke Richardt, Jessica Rauch, Anneli Sagar, Bernhard Fleischer, Minka Breloer, Anke Osterloh (Immunology)

Figure: In comparison to normal mice (A), animals made to express an excess of CD83 (CD83tg) produce strongly reduced amounts of antibodies (immunoglobulins, Ig) (B). Conversely, a blockade of CD83 results in an increased release of antibodies of the IgG1 subtype (C).



LASSA FEVER

Due to their high pathogenic potential, Lassa, Ebola, Marburg, and Crimean-Congo haemorrhagic fever viruses must be propagated and investigated in laboratories of the highest biosafety level. Lassa virus is endemic in West Africa while Ebola and Marburg virus cause local outbreaks in Central and East Africa. The natural host of Lassa virus are small rodents, which transmit the virus to humans via contaminated food. Antiviral treatment with the drug ribavirin is effective only at the early stage of infection. A vaccine is not available.



Reproduction machinery

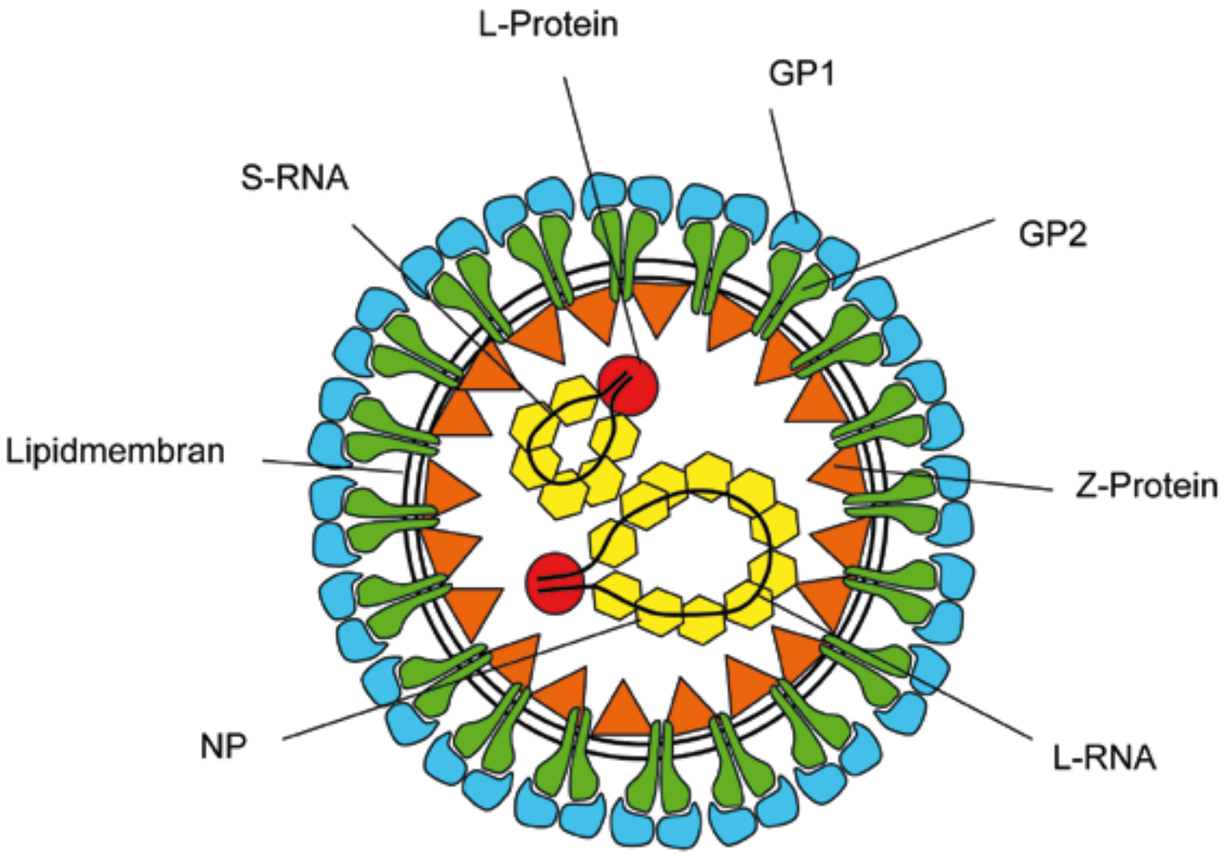
MAP OF A MAJOR LASSA PROTEIN

Like all viruses, Lassa virus reproduces inside a host cell and exploits the cellular machinery for protein synthesis. The largest protein of Lassa virus — the L protein — plays a central role in virus reproduction. At one end of this protein, we have discovered a region that is involved in the generation of virus messenger RNA and thereby the production of virus proteins. In the middle part of L protein, we identified the region mediating replication of the virus genome. Both regions represent potential targets for the development of new antiviral drugs.

Lelke M. et al., J Virol. 2010, 84:1934-44

Michaela Lelke, Linda Brunotte and Stephan Günther (Virology)

Figure: Distribution of the fist (left in red) and middle (right in green) part of the Lassa L protein inside an infected cell.



Dangerous presentation

A HUMAN PROTEIN MAKES LASSA VIRUS PATHOGENIC FOR MICE

In recent years, we learned that immune cells may play a dual role. On the one hand, they may prevent and clear infections, on the other hand, the inflammatory response they generate may cause serious illness. An impressive example is Lassa fever where the response of the human body to the virus is thought to be mainly responsible for illness and death. Normal mice are not susceptible to Lassa virus infection. However, if mice contain a certain protein of human immune cells which presents fragments of pathogens to other immune cells, so-called T lymphocytes, they also succumb to Lassa virus infection. We conclude that T lymphocytes play a dual role in Lassa fever: they are early mediators of disease; while at a later stage they help to clear the virus.

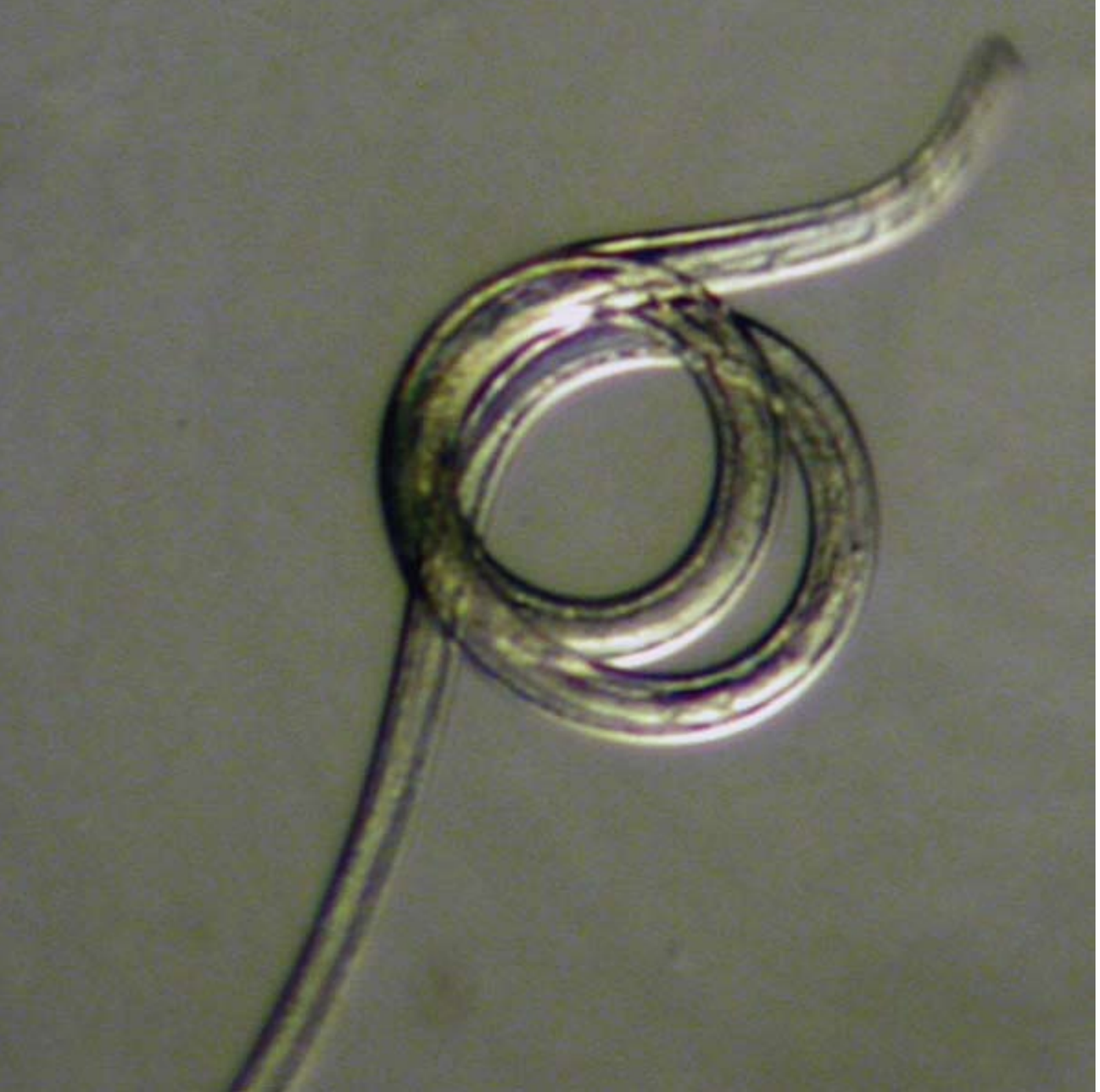
Flatz L. et al., PLoS Pathog 2010, 6:e1000836

Toni Rieger and Stephan Günther (Virology), Lukas Flatz and Daniel Pinschewer
(Zurich, Switzerland)

Figure: Lassa virus particle as it is formed in the blood of a patients.

WORM INFECTIONS

Two sides of a coin: approximately two thirds of the world's population are infected with worms. That these worms continuously modulate our immune system may be both beneficial and harmful.

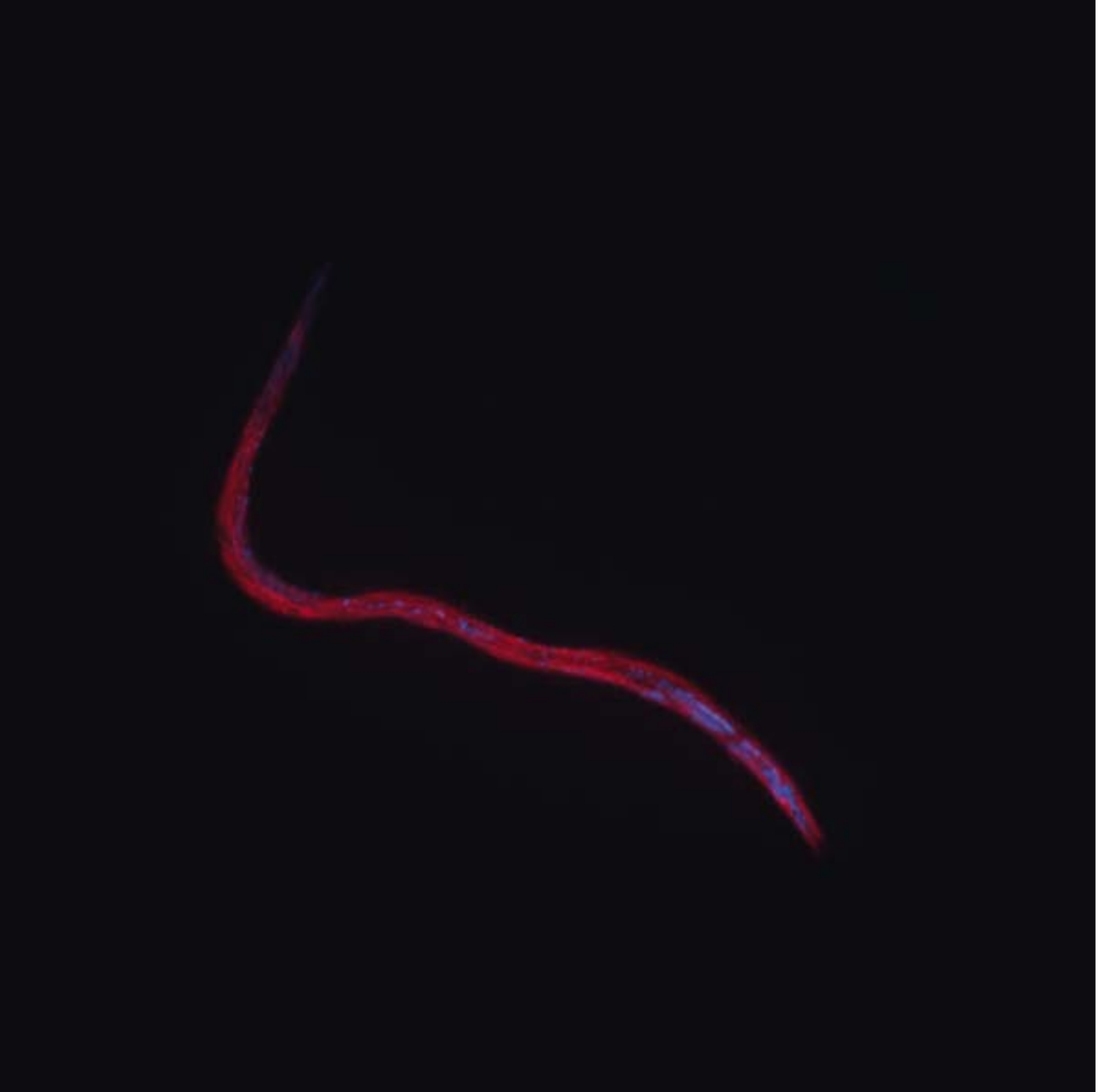


WORMS INTERFERE WITH VACCINATIONS

Worm infections in general are known to dampen immune responses, which may prevent successful vaccinations. We model this situation in mice by showing that concurrent infection with a roundworm *(Litomosoides sigmodontis)* suppresses antibody responses. Interestingly, the roundworm does not suppress the antibody producing immune cells (B lymphocytes) directly but rather interferes with the function of helper immune cells (T lymphocytes). These cells are needed to help B lymphocytes to mount a potent antibody response. Roundworm infection induces properties in these helper cells that are usually present in anti-inflammatory immune cells and silence our immune responses. First results showed that concurrent worm infection indeed suppressed the efficacy of an experimental malaria vaccine in mice.

Wiebke Hartmann, Julia Kolbaum and Minka Breloer (Helminth Immunology)

Figure: Litomosoides sigmodontis fourth stage larvae, which dwells in the thoratic cavity of infected mice (Image: Marie-Luise Eschbach).



About the silencer

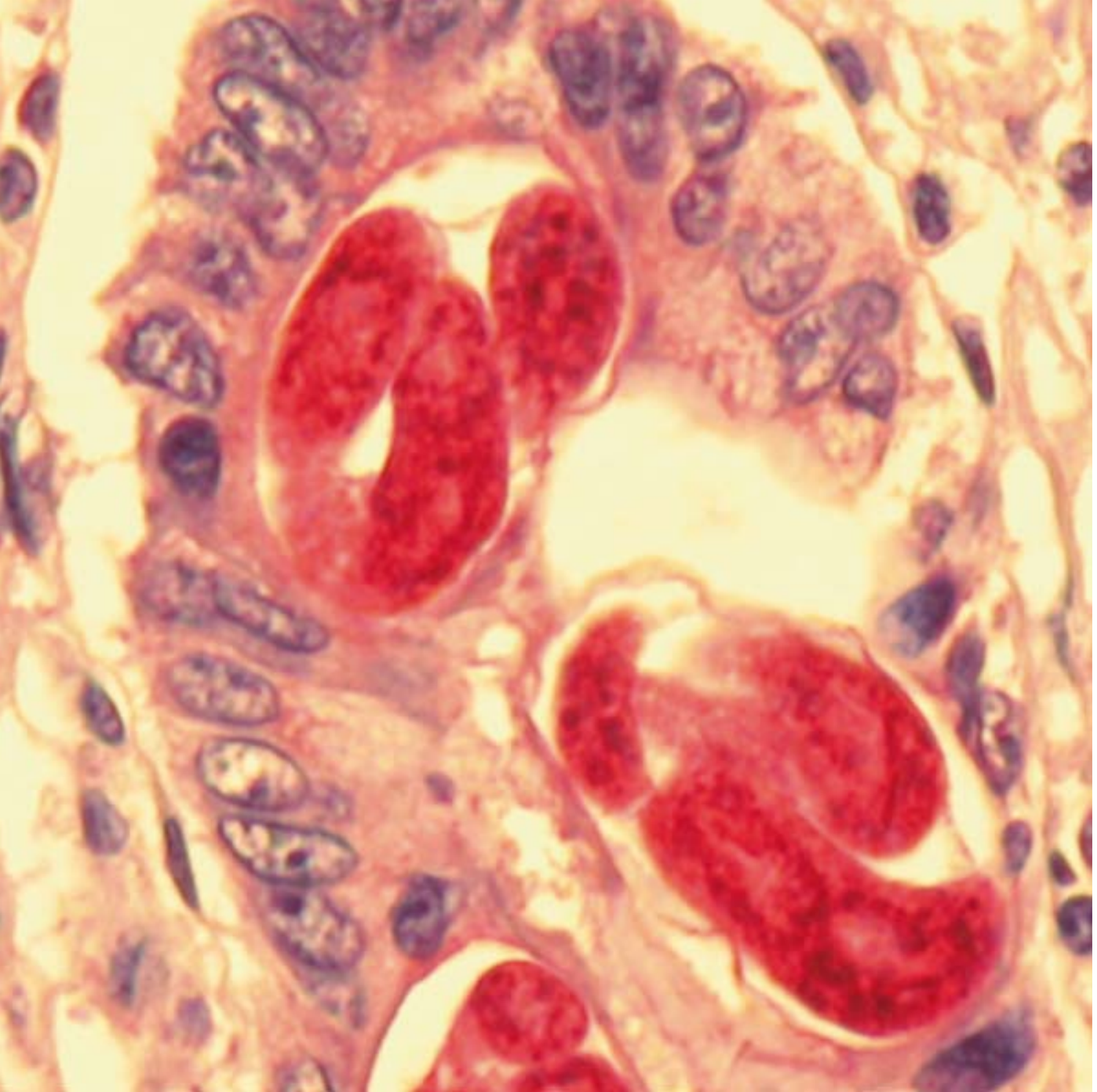
CLEARING STRONGYLOIDES RATTI

We use the murine model of a *Strongyloides ratti* infection as an example for a successful immune response against worms, as mice terminate this infection spontaneously and remain protected against subsequent infections. We found that this protective immune response was enhanced if we neutralized anti-inflammatory immune cells (regulatory T-lymphocytes) or proteins on the surface of these cells (CTLA-4) that usually silence immune responses. The worm burden was drastically reduced and mice were better protected against a second infection upon elimination of these silencing cells and proteins.

Eschbach M. et al., Parasite Immunol 2010, 32:1-14

Ulrike Klemm, Birte Blankenhaus, Julia Kolbaum, Marie-Luise Eschbach and Minka Breloer (Helminth-Immunology)

Figure: Strongyloides ratti infective larva, which infects its host by penetrating the intact skin (Image: Melanie Pidavent).



PROTECTION FROM LIFESTYLE DISEASES

By dampening the host immune response worms can also be of great value. Crohn's Disease and colitis ulcerosa are inflammatory bowel diseases (IBD) which show a dramatic increase in prevalence in industrialized countries. Artificial infections with intestinal worms are already in use for IBD treatment despite the fact that the basis of the therapeutic efficacy is still unknown. Using an infection model of *Strongyloides ratti* in rats, we identified 78 proteins released from *S. ratti* females, which normally are embedded in the mucosa of the small intestine. These proteins are now under investigation to pinpoint those responsible for the therapeutic down-regulation of the host´s immune response.

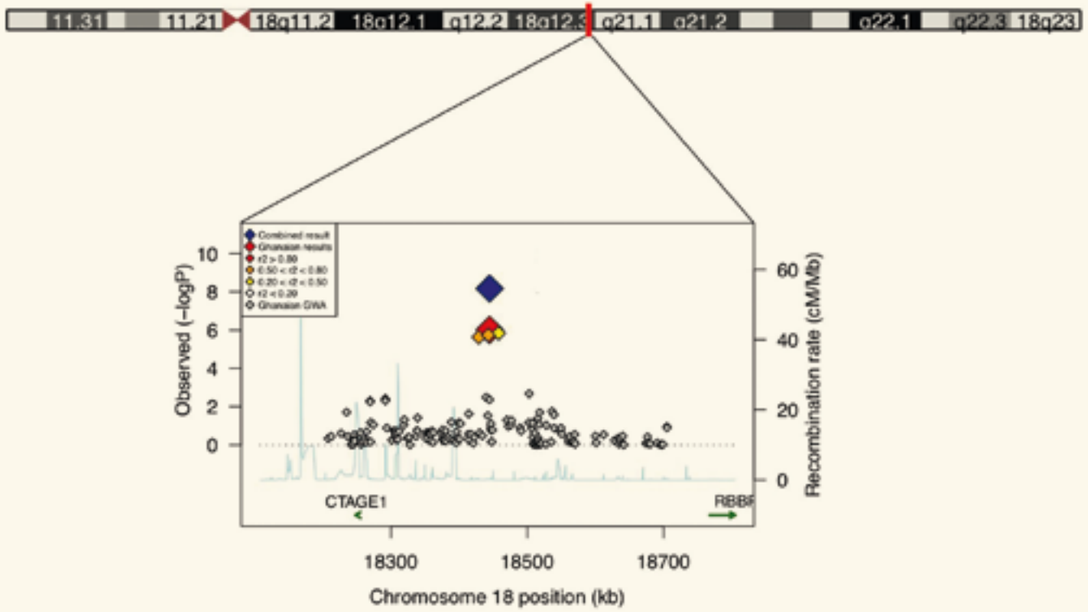
Tazir Y. et al., Mol Biochem Parasitol 2009, 168:149-57

Frank Geisinger, Silke van Hoorn, Abdul Hassan Mohammed, Louise Reher, Inga Toborg, Djafsia Boursou and Klaus Erttmann, Norbert Brattig (Helminthology)

Figure: Strongyloides – embedded in the intestinal mucosa – stained in red using an antibody to a worm protein.

TUBERCULOSIS

Tuberculosis (Tb) continues to spread worldwide, mostly because of the HIV pandemic as persons at later stages of HIV infections become particularly prone to Tb. An increasing threat is posed by Tb bacteria which are resistant to virtually all available drugs (”XDR resistant“). The Tb vaccine BCG does not provide reliable protection.



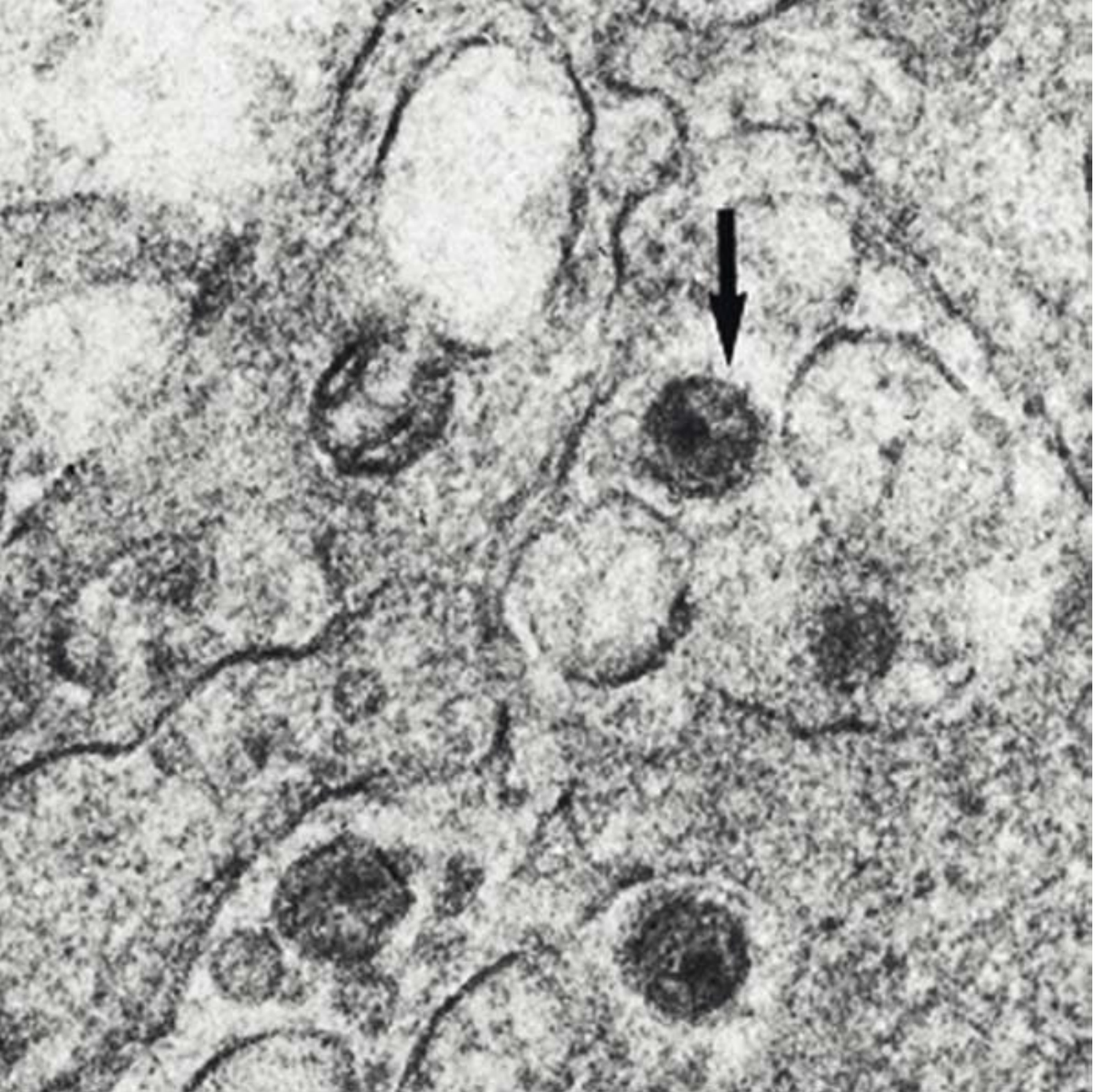
THE SEARCH FOR NATURAL PROTECTION AGAINST TUBERCULOSIS

Similar to malaria – see page 35 – we have in tuberculosis screened entire human genomes for systematic differences between affected and unaffected persons by determining nearly 1 million mutations in each genome. Only a joint analysis with colleagues from Oxford University studying a total of 4.000 patients and controls yielded a hit: Mutations in a region of chromosome 18 which contains no gene assigned so far, showed a statistically robust difference. The challenge is now to find out what mutation exactly is responsible and what the functional effects are.

Thye, T. et al., Nat Genet 2010, 42:739-41

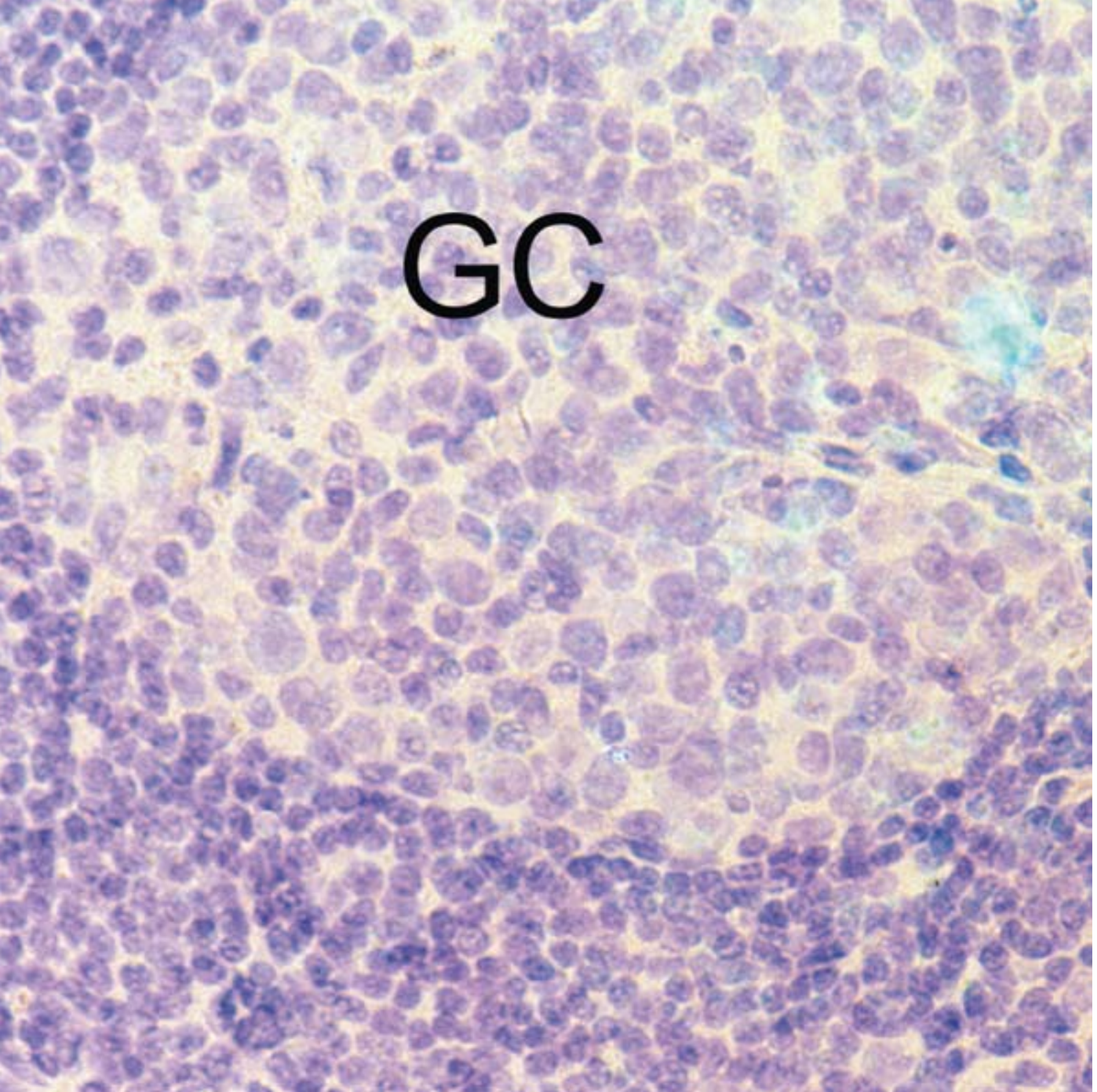
Thorsten Thye, Gerd Ruge, Jürgen Sievertsen, Christian G. Meyer and Rolf Horstmann (Molecular Medicine), Andreas Ziegler (University of Lübeck), Fredrik Vannberg, Adrian V. Hill (Oxford University), African TB Genetics Consortium, Wellcome Trust Case Control Consortium

Figure: Schematic drawing of chromosome 18 (top) and the region where mutations were found associated with tuberculosis. Shown are the positions of the mutations analysed in the region and for each of them the statistical significance of the difference between patients with tuberculosis and control persons. Mutations which are significantly associated are colour-coded (Graph: Thorsten Thye).



HIV / AIDS

HIV causes one of the globally most relevant infectious diseases, in particular in developing countries. Worldwide more than 33 million people are infected. They become highly susceptible to other infections, which commonly take a severe and often fatal course.



HIV VACCINATION BY THE INTESTINAL ROUTE

Our histological and molecular studies have shown that HIV infections very early on cause a gross destruction of the immune system of the intestinal tract. In approximately 70% of infected persons the damage cannot be cured by effective antiretroviral treatment. This is a focus of our research in humans.
Studying SIV-infections in monkeys as a model for human HIV, we have applied vaccine candidates through the intact intestinal mucosa and followed their way to the regional lymph nodes. We found that they are successfully transported into the germinal centers of the intestinal immune system – an important observation regarding vaccination strategies. Application of vaccines by the mucosa abrogates the risk of contaminations by injection needles, which is of great importance in resource-poor settings.

Falkensammer B. et al., Retrovirology 2009, 6:60 doi:10.1186/1742-4690-6-60

Jill Knips, Christine Stempel and Klara Tenner-Racz, Paul Racz (Pathology)

Figure: Vaccine candidate against monkey AIDS (labelled green) after oral application reaches the germinal centre (GC) of a lymphatic organ, where important immune mechanisms are set into motion.

NEGLECTED DISEASES

When the Bill and Melinda Gates-Foundation and other international funding agencies end of the 1990s started to focus their programmes on the ”big 3“ most important global infections AIDS, tuberculosis and malaria, ”Médicins sans frontières“ coined the term ”Neglected Diseases“. The World Health Organisation took over the term and in 2002 listed 14 diseases as being ”neglected“: Buruli ulcer, Chagas disease, Cholera, Dengue, dracunculiasis (guinea-worm disease), endemic treponematoses, soil-transmitted helminths, leishmaniasis, leprosy, lymphatic filariasis, onchocerciasis, schistosomiasis, sleeping sickness, and trachoma.
It was not acknowledged that certain poverty-related diseases might exist but not be realized because they could have escaped detection so far and which, therefore, may be considered particularly ”neglected“.

Painting: Hl. Martin, Konrad Witz, Successors, around 1450

'Kunstmuseum Basel'

Most neglected

SEARCHING FOR PATHOGENS IN AFRICA

We and others have shown that many African children who present with febrile illness may die because they are misdiagnosed as malaria and treated against malaria although they have a bacterial infection instead and need antibiotics.
A state-of-the-art microbiological facility including a biosafety level 3 laboratory has been established at Kumasi Centre for Collaborative Research in Tropical Medicine (KCCR) in Ghana in order to subject all children who report in a rural hospital with febrile illness to a vigorous diagnostic procedure comprising all bacteria, viruses and parasites we are able to detect. Clinical syndromes, possible sources of infection, pathogen drug resistance, and options for prevention are being investigated with an initial focus on typhoid fever and other salmonella infections.

Marks F. et al., Emerg Infect Dis 2010, 16:1796-7

Denise Dekker*, Julius Fobil, Caroline Krefis, Wibke Loag, Nimarko Sarpong*, Norbert Schwarz and Jürgen May (Infection Epidemiology, *stationed in Ghana)

Figure: Interviews of villagers on infection risks in the Ashanti Region, Ghana.

KUMASI CENTRE FOR COLLABORATIVE RESEARCH IN TROPICAL MEDICINE (KCCR)

RESEARCH IN THE ENDEMIC AREA

The Kumasi Centre for Collaborative Research in Tropical Medicine (KCCR) is a joint venture of the Institute with the Ghanaian Ministry of Health and Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana. It was founded in 1998 and serves as a platform for research projects jointly conducted by Ghanaian and international scientists. Approximately half of the projects have involved members of the Hamburg institute. Since 2003, KCCR is equipped with state-of-the-art laboratories and offices located on KNUST campus, which were established with funds of the public BNI stakeholders, the Volkswagen Foundation and the Association of Friends of BNI. Recently, the microbiological facilities were upgraded including a BSL-3 laboratory. KNUST officially appointed KCCR as the research centre of its College of Health Sciences in 2006.

The close scientific cooperation with Ghanaian partners provides great opportunities for capacity building. In addition to 40 staff members, a further 70 employees are assigned to the various research projects. KCCR promotes young scientists through long-term projects offering Master and PhD positions, which receive additional promotion through laboratory training, workshops and seminars.

Ongoing projects address Lymphatic Filariasis, Onchocerciasis, Malaria, Buruli Ulcer, salmonelloses, the search for underestimated childhood infections and the investigations of bats as reservoirs for emerging human infections. Under the umbrella of KCCR, the Gates Foundation established a vaccine study centre participating in testing the first promising malaria vaccine in a programme led by members of the KNUST School of Medical Sciences. In 2006, KCCR was appointed reference centre for Buruli Ulcer for Northern Ghana by WHO.

Further cooperative projects have been conducted by Institute members with partner institutions in Nigeria, Madagaskar, Togo, Benin, DR Congo and Vietnam.

COURSES

"At a glance"

- Daily lectures from 9 am to 4 pm
- More than 300 lessons
- Approximately 40 hours of practical exercises
- German reference library for literature on tropical medicine
- Certified by the German Federal Board of Physicians to be part of the official training programme for physicians to specialize in tropical medicine; certified by the American Society of Tropical Medicine and Hygiene
- Credit points awarded by the Hamburg Board of Physicians; 416 credit points in 2009

Historical photo: Lecture hall

Diploma Course on

TROPICAL MEDICINE

The objective of the Diploma Course on Tropical Medicine is to prepare physicians for professional missions in tropical and subtropical countries and to enable them to preventively care for visitors of warm climates and to diagnose and to treat tropical diseases.

The central topics of the Diploma Course are human diseases characteristic for warm climates. Teaching focuses on the pathogenesis, diagnosis, clinical presentation, treatment, epidemiology and prophylaxis of parastological, bacterial, viral and non-communicable tropical diseases. At the same time, the biology, epidemiology, as well as measures to control infectious agents, vectors and reservoirs are addressed. Further topics include the characteristics of the various clinical disciplines in tropical environments, problems of health care in poor countries and structures and performance of developmental cooperation and disaster missions.

The curriculum is divided into twelve sections of one week each. Differential diagnosis is the major guideline for the curriculum. Taxonomy is an additional criterion in order to facilitate systematic learning. Entomology is considered in its relation to the etiology and transmission of disease and therefore follows clinical classifications. Malaria, tuberculosis and HIV/AIDS, because of their outstanding relevance, are regarded separate topics.

Diploma Course on Tropical Medicine 2009:
The courses take place annually and extend over three months from April to June. In 2008, 42 physicians and biologists participated and 39 received the diploma. In 2009, 35 out of 40 participants succeeded.

Week 1: **Introductions and essentials:**
incl. immunology, haematology, tutorials

Week 2: **Systemic infections 1:**
Malaria incl. entomology, laboratory methods, tutorials, principles in epidemiology

Week 3: **Systemic infections 2:**
Viral and bacterial infections incl. entomology, laboratory methods, tutorials

Week 4: **Systemic infections 3:**
Protozoal infections and systemic mycoses

Week 5: **Intestinal diseases by protozoa, bacteria and viruses**
incl. laboratory methods, tutorials

Week 6: **Helminth infections**
laboratory methods, tutorials

Week 7: **Skin and veneral diseases, mycobacteriology, ophthalmology**

Week 8: **HIV infection/AIDS, tuberculosis**

Week 9: **Specific problems in certain disciplines**
incl. paediatrics, neurology, surgery, gynaecology, psychiatry, malnutrition,
environmental medicine, haematology and malignancies in the tropics, poisonous animals

Week 10: **Public Health, planning, financing**
and implementation of health projects, essential drugs, international co-operation

Week 11: **Epidemiology and disease control**
travel medicine, mother-child-care, reproductive health, vaccination programmes,
disaster management, hospital hygiene

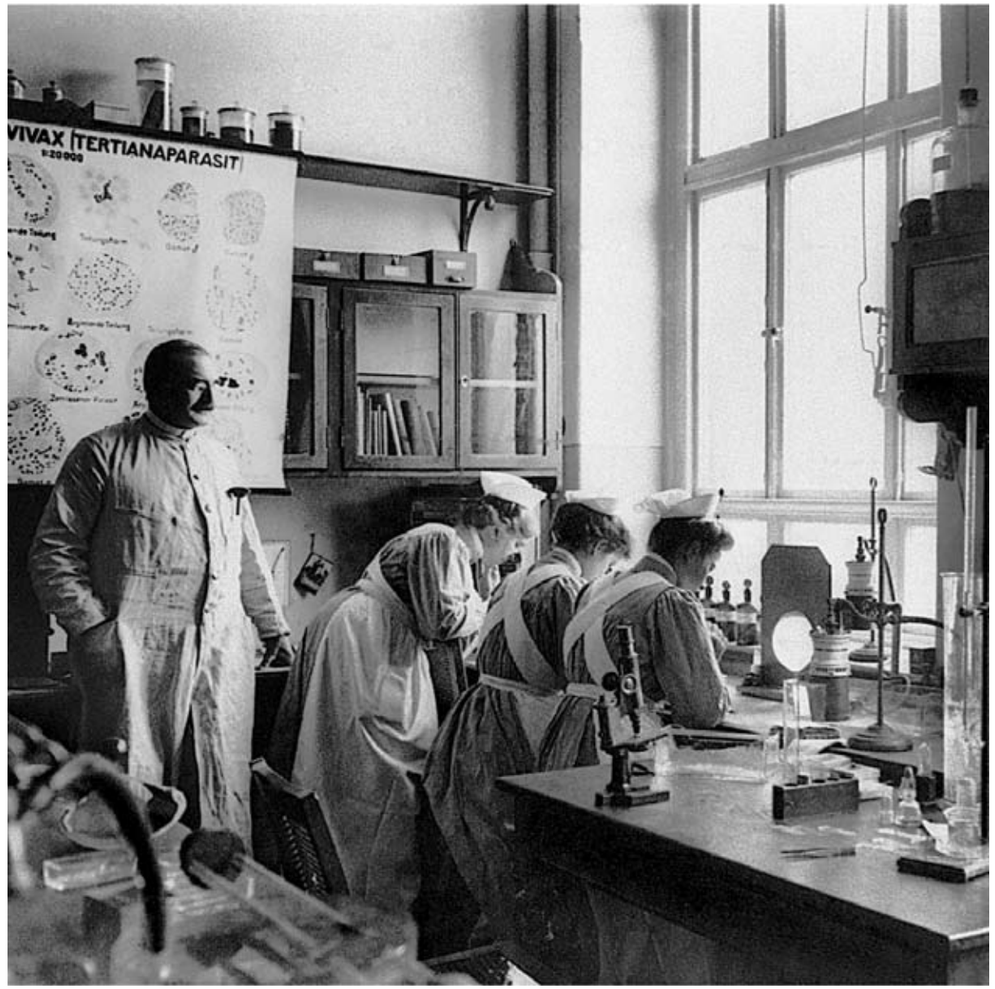
Week 12: **Differential diagnosis, repetitions**

Week 13: **Repetitions, final examination (practical and theoretical)**

LECTURERS OF THE DIPLOMA COURSE ON TROPICAL MEDICINE

INSTITUTE FACULTY **PD Dr. Norbert Brattig; Prof. Dr. Iris Bruchhaus; Prof. Dr. Gerd D. Burchard; Dr. Jakob Cramer; Dr. Stephan Ehrhardt; Prof. Dr. Bernhard Fleischer; Prof. Dr. Rolf Garms; Prof. Dr. Stephan Günther; PD Dr. Volker Heussler; Prof. Dr. Rolf Horstmann; Dr. Ute Lippert; Dr. Jens Matten; Prof. Dr. Jürgen May; Prof. Dr. Christian G. Meyer; Dr. Sven Poppert; Prof. Dr. Paul Racz; PD Dr. Jonas Schmidt-Chanasit; Prof. Dr. Herbert Schmitz; Prof. Dr. Justus Schottelius; Dr. Michael Schreiber; Prof. Dr. Egbert Tannich; Dr. Klara Tenner-Racz; Dr. Christian Timmann**

GUEST FACULTY **Dr. Matthias Brockstedt** Zentraleinrichtung für Datenverarbeitung, Freie Universität Berlin; **Dr. Christoph Dehnert** Medizinische Klinik und Poliklinik, Universität Heidelberg; **Prof. Dr. Christian Drosten** Institut für Virologie, Universitätsklinikum Bonn; **Dr. Alois Dörlemann** Health-Focus GmbH, Potsdam; **Dr. Karl-Peter Faesecke** Hyperbaric Training Center, Hamburg; **Dr. Thomas Fenner** Fenner Laboratorium, Hamburg; **Dr. Marcellus Fischer** Bundeswehrkrankenhaus Hamburg; **Prof. Dr. Hartmut Graßl** Max-Planck-Institut für Meteorologie, Hamburg; **Dr. Frank Haamann** Berufsgenossenschaft für Gesundheitsdienst und Wohlfahrtspflege, Hamburg; **Dr. Gertrud Helling-Giese** Ärztlicher Dienst des Deutschen Entwicklungsdienstes (DED) Bonn; **Prof. Dr. Achim Hörauf** Institut für Medizinische Mikrobiologie und Parasitologie, Universitätsklinikum Bonn; **Prof. Dr. Klaus Hoffmann** Zentrum für Psychiatrie, Landeskrankenhaus, Reicheau; **Prof. Dr. Volker Klauß** Augenklinik der Universität München; **Prof. Dr. Michael Krawinkel** Institut für Ernährungswissenschaft, Gießen; **PD Dr. Andreas Krüger** Bundeswehrkrankenhaus Hamburg; **PD Dr. Christoph Lange** Forschungszentrum Borstel; **Prof. Dr. Michael Leichsenring** Kinderklinik des Universitätsklinikums Ulm; **Dr. Ute Lippert** G&S Gesundheit und Sicherheit für Betriebe GmbH, Hamburg; **Prof. Dr. Thomas Löscher** Ludwig-Maximilians-Universität, München; **Prof. Dr. Ansgar Lohse** Universitätsklinikum Hamburg-Eppendorf, Hamburg; **Prof. Dr. Michael Leichsenring** Universitäts-Kinderklinik Ulm; **Prof. Dr. Dieter Mebs** Institut für Rechtsmedizin, Frankfurt; **Dr. Andreas Meyer** Arzt für Allgemeinmedizin, Tropenmedizin, Hamburg; **Silvia Miksch** Missionsärztliches Institut, Würzburg; **Dr. Henning Mothes** Klinik für Allgemein-, Viszeral- und Gefäßchirurgie, Klinikum der Universität Jena; **Dr. Rico Müller** Zentralinstitut der Bundeswehr Kiel, Berlin; **Dr. Klemens Ochel** Missionsärztliches Institut, Würzburg; **Prof. Dr. Utz Reichard** Institut für Medizinische Mikrobiologie, Universitätsklinik Göttingen; **Dr. Mathias Rotenhan** Bremen; **Dr. Sabine Rüsch-Gerdes** Forschungszentrum Borstel; **Prof. Genevieve Scarisbrick** Obernzell; **Dr. Johannes Schäfer** Tropenklinik, Paul-Lechler-Krankenhaus, Tübingen; **Salvatore Schmidt** Bundeswehrkrankenhaus Berlin; **Dr. Stefan Schmiedel** Universitätsklinikum Hamburg-Eppendorf; **Prof. Dr. Erich Schmutzhard** Universitätsklinik für Neurologie, Innsbruck; **Prof. Dr. Walter Sigge** Universitätsklinikum Schleswig-Holstein, Campus Lübeck; **Prof. Dr. August Stich** Missionsärztliche Klinik, Würzburg; **Dr. Tankred Stöbe** Ärzte ohne Grenzen, Berlin; **Lars Timm** Regio Klinikum Elmshorn; **Cord Versmold** Glandor; **PD Dr. Jan van Lunzen** Universitätsklinikum Hamburg-Eppendorf; **Dr. med. Klaus J. Volkmer** Centrum für Reisemedizin, Düsseldorf; **Dr. Matthias von Mülmann** Medizinischer Dienst der Lufthansa AG, Frankfurt; **Prof. Dr. Sawko Wassilew** Klinik für Dermatologie, Krefeld; **Dr. Dominic Wichmann** Universitätsklinikum Hamburg-Eppendorf; **Dr. Enno Winkler** Auswärtiges Amt/ Gesundheitsdienst, Berlin



COURSE FOR MEDICAL SUPPORT STAFF

The course provides basic knowledge and skills in tropical medicine and explicitly addresses the topics of Public Health and health care management. The courses of the years 2008 and 2009 were both held in February.

TARGET GROUPS:

Medical staff (nurses, technical assistants, midwives, health economists) preparing for professional assignments in warm-climate countries; in addition medical staff wanting to acquire or deepen tropical medicine skills.

Kursus für medizinisches Fachpersonal 2009

Contents

- Tropical infectious diseases:
  malaria, leprosy, tuberculosis, schistosomiasis and other helminth diseases, viral infections
- Insects as vectors
- malnutrition
- basic epidemiology
- General aspects:
  obstetrics, family planning, paediatrics venereal diseases, dermatology, HIV/AIDS, travel medicine etc.
- Physical examination of patients, laboratory techniques microscopy
- Socio-cultural comparison of health systems
- Intercultural competence
- Hygiene, drinking water
- Nursing practice in the tropics
- NGOs
- Information systems, literature and internet search
- teamwork

Facts and Figures

STAFF

216 including 95 scientists (2009)

FUNDING

	2008	2009
	Mio. EUR	Mio. EUR
Public core funding	10,3	10,8
Public funding of investments	1,2	1,3
Third-party funding and other income	4,4	3,2

Third-party funding has been received from the following organizations:

Alexander von Humboldt Foundation; Arthur und Aenne Feindt Foundation; Australian Education; Boehringer Ingelheim Fonds; Bundesamt für Bevölkerungsschutz und Katastrophenhilfe (BBK); Bundesministerium für Bildung und Forschung (BMBF); Bundesministerium für Gesundheit (BMG); Bundesministerium für Verteidigung (BMVg); Centrum für Internationale Migration und Entwicklung (CIM); Chica und Heinz Schaller Foundations; Deutsche Forschungsgemeinschaft (DFG); Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ); Deutsche Krebshilfe e.V.; Deutsche Lepra und Tuberkulose Hilfe (DAHW); German Academic Exchange Service (DAAD); Dr . Mildred Scheel Foundation for Cancer Research; European Commission; Evangelisches Studienwerk e. V. Villigst; Institut Virion/Serion GmbH, Würzburg; Freie und Hansestadt Hamburg (Europäischer Fonds für Regionale Entwicklung); GeoSentinel; Gesellschaft zur Förderung der Qualitätssicherung in medizinischen Laboratorien e.V.; Health Focus GmbH; Instand e.V.; Internationale Behörde für Wirtschaft und Arbeit; John Wiley & Sons, Inc (Blackwell Publishing Ltd); Jung-Stiftung für Wissenschaft und Forschung; National Institutes of Health (NIH), USA; Nationales Genomforschungsnetz; Senior Expert Service; Provecs Medival GmbH; Robert Koch-Institut; Stiftung der Deutschen Wirtschaft für internationale Zusammenarbeit gGmbH; Stiftung für medizinische Grundlagenforschung; Studienstiftung des Deutschen Volkes (German National Academic Foundation); TECHLAB®, Inc.; The International Vaccine Institute; UBS Optimus Foundation; Vereinigung der Freunde des Tropeninstituts Hamburg e. V.; Volkswagen Stiftung; Wettbewerbliches Verfahren der Leibniz-Gemeinschaft (Pakt für Forschung und Innovation)

Performance Indicator	2008	2009
Publications	**115**	**116**
in peer-reviewed journals	99	98
average impact factor	*4,02*	*4,05*
in others	16	18
Qualifications	**29**	**26**
Diploma / Master's thesis	11	14
Dissertations	16	12
Habilitations	2	0
Teaching, education and training		
University (SWS*)	133	119
Education and training events (days)	101	74
Technology transfer (running)		
Patents and licenses	12	14
Laboratory diagnostics		
Number of cases	21.302	20.279
Number of tests	82.473	75.733
Library		
Inventory	45.414	45.786
Journals	169	174
Inter-library loan	3.902	3.721
KCCR**		
Total projects	18	15
non-BNI projects	11	13

*Lessons per semester week , **Kumasi Centre for Collaborative Research in Tropical Medicine

Staff

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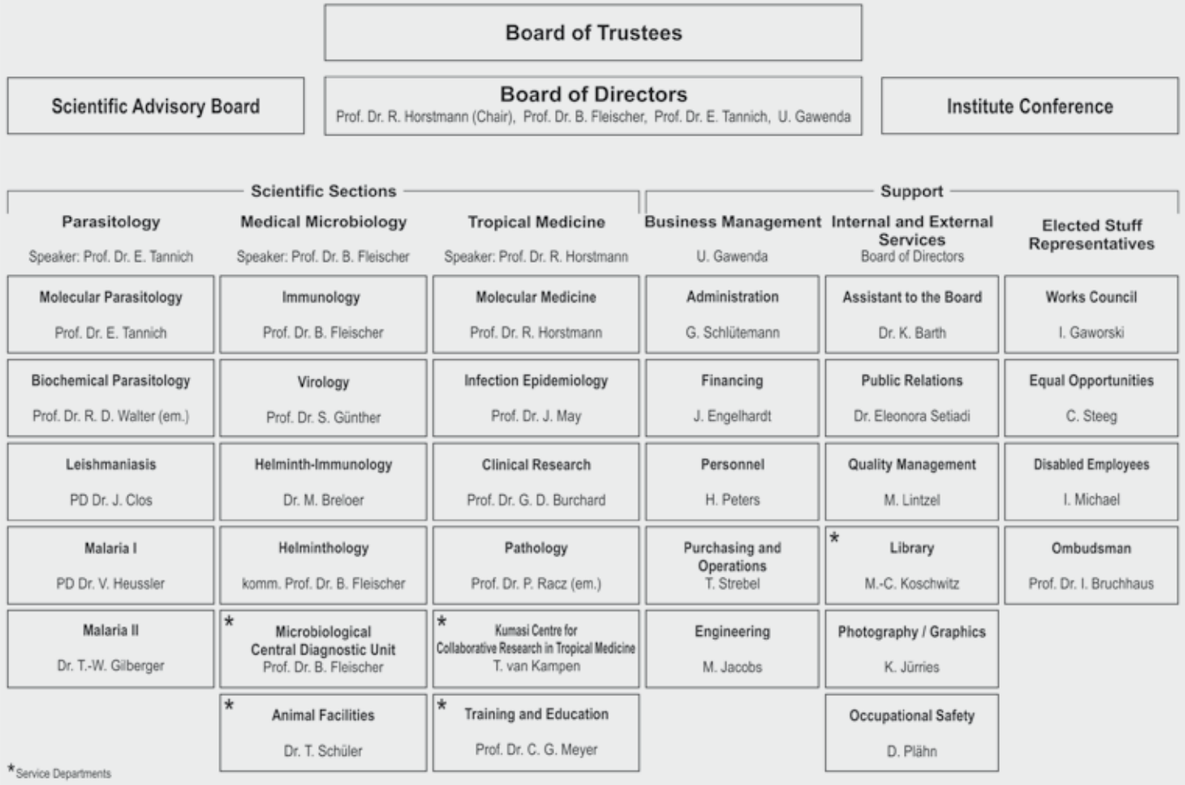

2009

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(*=end of employment during the reporting period)

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Daniela Schlage, Board of Directors, Tropical Medicine **Section**
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Petra Stanislowsky, Courses
Elke Werner, Section Parasitology, German Society for Tropical Medicine and International Health
Elke Wrage, Medical Microbiology Section; Assistance, „Association of the Friends of the Institute for Tropical Medicine Hamburg e.V.“

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** until May 2009

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Appendix

PUBLICATIONS 2008/2009

Peer-reviewed articles

(BNI staff members underlined)

Ahmad R, Srivastava AK and Walter RD (2008). Purification and biochemical characterization of cytosolic glutathione-S-transferase from filarial worms Setaria cervi. Comp Biochem Physiol B Biochem Mol Biol 151 (3): 237-45.

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Uliczka KA (2009). Dynamik der Genexpression varianter Oberflächenantigene verschiedener Plasmodium falciparum-Isolate (Welch, 1897) während des erythrozytären Zyklus. Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie. Universität Hamburg.

Zacherl, S (2008). Charakterisierung der cytoplasmatischen Domäne des Vakzinkandidaten AMA-1 im humanpathogenen Erreger Plasmodium falciparum. Applied Science. Universität Mannheim.

Dissertations

Bickert, T (2008). Die Bedeutung des Zelladhäsionsmoleküls CEACAM1 bei der Lymphgefäßneubildung im experimentellen Modell der kutanen Leishmaniose. Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie Universität Hamburg.

Biller L (2009). Identifizierung der Pathogenitätsfaktoren von Entamoeba histolytica (Schaudinn, 1903) mittels vergleichender Transkriptom-Analysen, Proteom-Analysen und Phänotypisierung. Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie. Universität Hamburg.

Erdmann, H (2008). Untersuchungen zur Funktion von Siglec-E (sialic acid-binding Ig-like lectin-E) im Verlauf der Trypanosoma cruzi (Chagas, 1909)-Infektion in der Maus (Mus musculus, Linnaeus, 1758). Fakultät für Mathematik, Informatik und Naturwissenschaften. Department Biologie, Universität Hamburg.

Gonzalez-Roldan, N (2008). Structural analyses of the lipopeptideo-phosphoglycan (LPPG) from Entamoeba histolytica and its role in the activation of immune responses: recognition by Toll-like receptors and antigenic presentation by CD1d. National School of Biological Sciences, National Polytechnic Institute, Mexico.

Haase, S (2008). Invasion und Modifikation von Erythrozyten durch den Malariaparasiten Plasmodium falciparum (Welch, 1897). Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie, Universität Hamburg.

Hartmann, W (2008). Einfluss von Granzym A und B auf die Immunabwehr gegen die Filarie Litomosoides sigmodontis (Chandler, 1931) (Mus musculus; Linnaeus, 1758). Fakultät für Mathematik, Informatik und Naturwissenschaften, Department für Biologie, Universität Hamburg.

Helmkampf M (2009). Molecular phylogenetic analyses of Bryozoa, Brachipoda, and Phoronida. Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie. Universität Hamburg.

Herb, F (2008). Genetische Assoziationen von ALOX5-Varianten bei Patienten mit Tuberkulose und Kontrollen in Ghana und funktionelle Bedeutung der strukturellen Veränderung der 5-Lipoxygenase. Pharmazie, Universität Hamburg.

Hermann S (2009). Charakterisierung des anterograden Proteintransportes im Malariaerreger Plasmodium falciparum (Welch, 1897). Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie. Universität Hamburg.

Horstmann, S (2008). Identifikation des Leberphasen-spezifisch exprimierten Proteins PbLSA4 von Plasmodium berghei (Vincke & Lips, 1948) und Charakterisierung des pblsa4-Promotorbereichs. Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie, Universität Hamburg.

Knöckel J (2009). Die Vitamin B6-Biosynthese von Plasmodium falciparum. Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie. Universität Hamburg.

Kretschmer B (2009). Einfluss von CD83 auf die Funktion muriner B-Lymphozyten (Mus musculus; Linnaeus, 1758). Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie. Universität Hamburg.

Kreuels B (2009). Räumliche Variation der Inzidenz von Plasmodium falciparum Malaria und ihr Einfluss auf die Wirksamkeit einer intermittierenden präventiven Behandlung bei Kleinkindern aus einem Gebiet hoher Endemizität. Medizinische Fakultät. Universität Göttingen.

Kühl, R (2008). Isolation und Charakterisierung einer minimalen funktionellen Domäne mit ATP-bindenden Eigenschaften der NTPase/Helikase des Hepatitis C. Fakultät für Medizin, UKE, Universität Hamburg.

Luna, L K d S (2008). Human respiratory and enteric viruses: methods for diagnostic and discovery. Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie, Universität Hamburg.

Merz S (2009). Abhängigkeit der Milzgröße von Plasmodien-Parasitamie, Sichelzellanämie, HbC-Hämoglobinopathie und glucose-6-Phosphat-Dehydrogenase-Mangel in einem hyperendemischen Malariagebiet Ghanas. Medizin. Universität Magdeburg.

Mönkemeyer, F (2008). Entwicklung und Evaluation eines neuen Testverfahrens zur PCR-gestützten Diagnostik deletionaler a+- Thalassämien. Fakultät für Medizin, Universität Hamburg.

Moosmeier I (2009). Bestimmung der Multiklonalität der asymptomatischen Plasmodium falciparum-Infektion im holoendemischen Süden Nigerias anhand der Merozoitenoberflächenantigene msp1 und msp2. Charité - Universitätsmedizin Berlin. Humboldt-Universität zu Berlin.

Rennenberg A (2009). Charakterisierung eines Cysteinproteaseinhibitors von Plasmodium berghei (Vincke und Lips, 1948). Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie. Universität Hamburg.

Schmidt-Christensen, A (2008). Charakterisierung der putativen SERA-Cysteinproteasen-Familie während der Leberphase von Plasmodium berghei (Vincke und Lips, 1948). Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie, Universität Hamburg.

Schuldt, K (2008). Humane Endothelrezeptoren für den Malaria-Parasiten Plasmodium falciparum (Laveran, 1880). Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie, Universität Hamburg.

Soblik H (2009). Proteomic analysis of parasitic versus free-living generations of Strongyloides ratti. Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Chemie. Universität Hamburg.

Sturm, A (2008). Parasit-Wirtszell-Interaktionen während der Malaria-Leberphase. Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie, Universität Hamburg.

Tazir, Y (2009). Stongyloides ratti: Identification and characterization of heat shock protein 10 and heat shock protein 60. Aufbaustudiengang Molekularbiologie, Universität Hamburg.

Tillack, M (2008). Identifizierung, Genexpressionsanalyse und funktionelle Charakterisierung von Peptidasen von Entamoeba histolytica (Schaudinn, 1903). Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie, Universität Hamburg.

Treeck M (2009). Transport und Funktion adhäsiver Proteine des Malariaerregers Plasmodium falciparum (Welch, 1897). Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie. Universität Hamburg.

Tsianakas, A (2008). Expression von CD152 (CTLA-4) auf T-Lymphozyten im Melanom und im Blut nach Hyperthermie. Fakultät für Medizin, UKE, Universität Hamburg.

Yperen, M v (2008). Untersuchung von Hypochlorit-modifizierten Proteinen und deren Rolle bei der Inhibition von HIV. Fakultät für Mathematik, Informatik und Naturwissenschaften, Department Biologie, Universität Hamburg.

Habilitations

Graefe, S (2008). Immunologische und immunogenetische Aspekte zu Suszeptibilität und Resistenz bei der experimentellen Chagas-Erkrankung. Fakultät für Medizin. Universität Hamburg.

Jacobs, T (2008). Untersuchungen zur Regulation und Funktion von T-Zellen bei der Malaria. Fakultät für Medizin. Universität Hamburg.

LECTURES AND SEMINARS OF THE BNI AT THE UNIVERSITY OF HAMBURG

Faculty of Medicine	**winter**	**summer**
Elective course: Tropical and travel medicine; 12 weeks* *Egbert Tannich, Gerd Burchard*	X	X
Introduction into tropical medicine / Basic knowledge on tropical medicine; seminar, 1 hour *Rolf Horstmann, Christian Timmann, Jürgen May*	X	X
Epidemiology and control of tropical diseases; 2 hours *Jürgen May, Norbert Schwarz, Christian Meyer, Christian Timmann, Rolf Horstmann*	X	X
Introduction into molecular parasitology; 2 hours *Egbert Tannich and co-workers*	X	X
Biology and diagnostics of human parasites; 2 hours *Egbert Tannich and co-workers*	X	
Current results of basic research in parasitology; seminar; 2 hours *Egbert Tannich and co-workers*	X	X
Current problems in virology; seminar, 1 hour *Stephan Günther and co-workers*	X	X
Current problems in immunology; seminar, 1 hour *Bernhard Fleischer and co-workers*	X	X
Introduction into immunology for medical students; lecture, 1 hour *Bernhard Fleischer, Friedrich Haag, Thorsten Krieger, Friedrich Nolte / Marc Jacobsen, Sebastian Graefe*	X	X
Immunological literature; seminar, 1 hour *Bernhard Fleischer, Friedrich Haag, Thorsten Krieger, Friedrich Nolte*	X	X
Practical course in immunology; 14 days *Thomas Jacobs, Minka Breloer, Bernhard Fleischer, Friedrich Nolte, Friedrich Haag*	X	X
Mechanism of signal transduction and regulation of gene expression in eukaryotes; seminar *Volker Heussler*	X	X
Immunological aspects of host-pathogen interactions in infectious diseases; 2 hours *Paul Racz, Klara Tenner-Racz*	X	X
Cross-disciplinary subject immunology / infectious diseases; 2 hours *Bernhard Fleischer and co-workers*	X	X

Faculty of Biology	winter	summer
Molecular parasitology; lecture, 2 hours *Iris Bruchhaus, Volker Heussler, Tim-Wolf Gilberger, Hannelore Lotter*		X
Molecular parasitology; practical course 6 hours *Iris Bruchhaus, Volker Heussler, Tim-Wolf Gilberger, Hannelore Lotter*		X
Molecular biology and protein chemistry of the human malaria parasite Plasmodium falciparum ; practical course., 6 hours *Carsten Wrenger, Ingrid B. Müller, Rolf D. Walter*		X
Vitamin B6 biosynthesis in Plasmodium falciparum: Molecular biological analysis of the enzyme complexes; practical course, 6 hours *Carsten Wrenger, Ingrid B. Müller, Rolf D. Walter*	X	
Virological course for biochemists; practical course, 2 weeks *Stephan Günther and co-workers*	X	
Tropical viruses: clinic, diagnostics, pathogenesis and molecular biology; lecture, 2 hours *Stephan Günther and co-workers*	X	
Cellular and molecular immunology; lecture, 2 hours *Bernhard Fleischer and co-workers*		X
Current problems in immunology; seminar, 1 hour *Bernhard Fleischer and co-workers*		X
Immunological literature seminar; 1 hour *Bernhard Fleischer and co-workers*		X

Faculty of Chemistry	winter	summer
Five-day training for virus biochemists *Stephan Günther and co-workers*		X
Tropical viruses: clinic, diagnostics, pathogenesis and molecular biology; lecture, 2 hours *Stephan Günther and co-workers*		X
Biochemical analysis; lecture, 2 hours *Joachim Clos and other professors of biochemistry*		X

* **Elective course Tropical and Travel**

Medicine for medical students at the
University of Hamburg

Tutors
Prof. Dr. Gerd-Dieter Burchard
(clinical tropical medicine)
Prof. Dr. Egbert Tannich
(theoretical tropical medicine)

Elective Course Tropical and Travel Medicine

This course provides students who show a special interest in tropical and travel medicine the opportunity to focus their course work. Therefore, this option has been offered for several years in cooperation with the University Medical Center for a maximum of six selected medical students. The subject of tropical and travel medicine is particularly suited for an interdisciplinary lesson because:

- it is not related to one organ; tropical diseases generally affect many organ systems,
- tropical medicine is a typical cross-disciplinary subject, which includes not only internal medicine training but also theoretical, diagnostic, surgical and microbiological aspects.
- it addresses not only aspects of curative medicine but also of public health.

The course runs over 12 weeks and takes place twice a year starting in October and January. Registration on the website of the medical faculty:

www.uke.uni-hamburg.de/studierende.

SEMINARS

Prof. Dr. Thomas Pomorski
Institut für Biologie/Biophysik, Humboldt-Universität, Berlin
"Lipid transport and drug resistance in Leishmania"
(14.01.2008)

Dr. Sergey Nejentsev, MD, PhD
Cambridge Institute of Medical Research, University of Cambridge
"Genetics of type 1 diabetes" (15.01.2008)

Dr. Norbert Schwarz
Institut de Veille Sanitaire, Paris
"Placental malaria is associated with a higher malaria risk in the first 30 months of life" (18.01.2008)

Dr. Sven Mostböck
Universität Regensburg, Dep. of Immunology
"Costimulation leads to reduced memory CD8 T cell functionality" (12.02.2008)

Dr. Marek Cyrklaff
Max-Planck-Institut für Biochemie, Martinsried
"Cyro-electron tomography of whole cell: the pathogens in 3D" (19.02.2008)

Dr. Michael Walther
MRC Laboratories, Atlantic Boulevard, Fajara, The Gambia
"What causes Severe Malaria? – on the potential role of T-regulatory cells and parasite invasion phenotypes" (25.02.2008)

Dr. Friedrich Frischknecht
Universität Heidelberg, Abt. Parasitologie
"Imaging movement of malaria parasites" (03.03.2008)

Dr. Harald Ittrich
Molecular Imaging Center (MIC) & Diagnostikzentrum Universitätsklinikum Hamburg-Eppendorf
„Möglichkeiten der nichtinvasiven Kleintierbildgebung mittels MRT" (08.04.2008)

Prof. John Hyde
University of Manchester, UK
"Folate biosynthesis in malaria-parasites – rewriting the textbooks" (15.04.2008)

Prof. Peter Preiser
Nanyang Technological University, Singapore
"New insights into red blood cell invasion by malaria merozoites" (17.04.2008)

Major Jonathan Opai-Tetteh
z.Zt. Führungsakademie der Bundeswehr, Hamburg
„Ghana: Geschichte, kultureller und sozioökonomischer Hintergrund sowie deutsch-ghanaische Beziehungen" (08.05.2008)

Prof. Adrian V.S. Hill
The Jenner Institute, Oxford, UK
"Tropical infectious diseases: some genes and some vaccines" (26.05.2008)

Dr. Cordula Stover
University of Leicester
Dep. of Infection, Immunity and Inflammation
"Properdin: New discovery on role of vital protein that fights meningitis" (27.05.2008)

Dr. Kerrin Small
Wellcome Trust Centre for Human Genetics, University of Oxford, UK
"Genome-wide association study of severe malaria" (29.05.2008)

Prof. Osamu Kaneko
Institute of Tropical Medicine, Nagasaki University, JAPAN
"The hidden weapons of the malaria parasite: Rhoptries and their protein complexes" (09.06.2008)

Prof. Brendan Crabb
Burnet Institute, Melbourne
"Early events mediating invasion into erythrocytes by the malaria parasite" (17.06.2008)

PD Dr. Susanne Hartmann
Humboldt Universität Berlin, Molecular Parasitology
"Immunomodulation by parasitic nematodes: novel strategies to interfere with allergic inflammation" (24.06.2008)

PD Dr. Ralf Ignatius
Charité Berlin
"Exploiting dendritic cell biology to define new adjuvants for the development of HIV-vaccines" (01.07.2008)

Dr. Nicole Fischer
Institut für Med. Mikrobiologie, Virologie und Hygiene, UKE
"Virus Detection and Discovery using DNA Microarrays" (07.07.2008)

Prof. Dr. Gisa Tiegs
Institut für Experimentelle Immunologie und Hepatologie, UKE
"Immune-mediated liver injury: Pathophysiology and Tolerance Induction" (08.07.2008)

Prof. John D. Fraser
School of Medical Sciences, Maurice Wilkins Centre for Molecular Biodiscovery, University of Auckland
"Understanding staphylococcal virulence" (10.07.2008)

Dr. Fabian Leendertz
Robert Koch-Institut
„Erreger, die aus dem Urwald kommen" (22.07.2008)

Dr. John Bosco Rwakimari
Uganda National Malaria Control Programme, Ministry of Health
"DDT use to fight malaria and its effects on agriculture" (30.09.2008)

Joanne Heng
University of Melbourne
"Investigations into hexosamine-dependent virulence factors in Leishmania" (02.10.2008)

Prof. Dr. Christian Maercker
University of Applied Sciences Mannheim
"Monitoring of cell adhesion by electric cell-substrate impedance sensing (ECIS)" (15.10.2008)

Prof. Dr. Tim Sparwasser
TwincoreMHH/HZI
"Novel approaches for vaccine design: Bypassing Treg activity enhances T cell-mediated immunity" (28.10.2008)

Dr. Kathleen E. Rankin
Dept. of Physiology and Biophysics, University of Washington, Seattle, USA
"Microtubule stability and the cell cortex: The role of MCAK in microtubule-cortex interactions" (20.11.2008**)**

Dr. Samuel Blay Nguah
Komfo Anokye Teaching Hospital, Dept. of Child Health, Kumasi, Ghana
"Acid-base status and serum electrolytes in children with severe malaria at KATH" (04.12.2008)

Gerald Spaeth
Department of Parasitology, Pasteur Institute, Paris
"From Sensing to Virulence: Deconstructing Leishmania signalling during the infectious cycle using phosphor-proteomic approaches" (09.12.2008)

Dr. Marcel Deponte
Ludwig-Maximilian-Universität, München
"New lessons on glutathione-dependent catalysis and evolution of the mitochondrial protein transport machinery" (13.01.2009)

Prof. Dr. Henning Ulrich
University of Sao Paulo
"Invasion ligands and inhibitors for the study of the mechanism of cell infection by Trypanosoma cruzi" (03.03.2009)

Dr. Clarissa Da Costa
Institute for Medical Microbiology, Immunology and Hygiene, Technical University of Munich
"Linking innate and adaptive immune responses during schistosomiasis: Treg, TLR2 and the role of commensal bacteria" (10.03.2009)

Dr. Sven B. Gould
University of Melbourne, School of Botany, Australia
"Learning from one another:The cytoskeleton of Alveolates" (28.04.2009)

Dr. Monica Hagedorn
Dép. de Biochemie, Faculté des Sciences, Université de Genève, Suisse
"Dictyostelium, a new model to study mycobacteria virulence and host defense mechanisms" (08.05.2009)

Prof. Vivek Malhotra
Center for Genomic Regulation " Barcelona
"Pathways of conventional and unconventional protein secretion" (12.05.2009)

Dr. Adam Grundhoff
Heinrich-Pette-Institut, Hamburg
"Virus-encoded microRNAs" (02.06.2009)

Prof. Dr. Klaus Lingelbach
Philipps-Universität, FB Biologie, Marburg
"Protein trafficking in Plasmodium falciparum-infected red blood cells and downstream effects" (09.06.2009)

Dr. Steffen Borrmann
Heidelberg University School of Medicine, Institute of Hygiene
Kenya Medical Research Programme/Wellcome Trust, Kilifi, Kenya
"Evolution of drug-resistant Plasmodium falciparum in Kilifi, Kenya" (23.06.2009)

Michael Reese, Ph.D.
Stanford University, USA
"Virulence without catalysis: Probing the role of Toxoplasma secreted pseudokinases in pathogenesis" (24.06.2009)

Prof. D. Soldati-Favre
University of Geneva, Switzerland
"The glido some: an engine powering motility and host cell invasion by the Apicomplexa" (30.06.2009)

Prof. Francesco Ria
Institute of General Pathology, Catholic University, Rome, Italy
"How host and pathogen determine the outcome of immune responses at the individual T cell level." (07.07.2009)

Dr. Andreas Hutloff
Robert-Koch-Institut und
Deutsches Rheuma-Forschungszentrum, Berlin
"The Role of ICOS in T/B-Cell-Cooperation in vivo" (31.08.2009)

Prof. Brian K. Coombes
McMaster University, Canada
"Regulatory evolution in an intracellular bacteria and its implications for pathoadaption" (07.09.2009)

Prof. Antonio Cassone, MD
Research Director and Chief, Dep. of Infectious, Parasitic and Immuno-mediated Diseases,

Istituto Superiore di Sanità, Rom / Italien
"IFN-gamma response in TB: a double edge sword" (15.09.2009)

Prof. Geoff McFadden
University Melbourne, Australia
"The relict plastid of malaria parasites" (25.09.2009)

Annika Rademacher
Institut de Biologie Moléculaire et Cellulaire (IBMC), Université Strasbourg, France
"Identifcation and characterization of genes involved in TEP1 dependent Plasmodium killing in Anopheles gambiae" (28.09.2009)

Dr. Ger van Zandbergen
Uniklinik Ulm
"Apoptosis driven Leishmania Infection" (20.10.2009)

Dr. Sindy Böttcher
Greifswald
"Herpesvirus tegument" Identification of functional domains or: How to find the Achilles heel of an essential protein" (20.10.2009)

Dr. Anke van den Berg
Pathology and Laboratory Medicine, University Medical Center, Groningen, The Netherlands
"MicroRNA profiles of normal B cell subsets and B cell lymphoma" (03.11.2009)

Prof. Per Brandtzaeg
Rikshospitalet University Hospital, Instute of Pathology, Oslo, Norwegen
"Mucosal immunity: induction of protective and homeostatic mechanisms" (24.11.2009)

Samantha N. McNulty
Infectious Diseases Div., Dep. of Internal Medicine, Washington University School of Medicine, St. Louis, USA
"Endosymbiont DNA in endobacteria-free filarial nematodes indicates past genetic transfer" (08.12.2009)

Dr. Kevin J. Saliba
The Australian National University, Canberra, Australia
"Transport of thiamine into P. falciparum-infected erythrocytes and isolated parasites" (15.12.2009)

STAFF ACTIVITIES

PD Dr. Norbert Brattig
Tropical Medicine Section

Editorial Activities
Editor, Acta Tropica (since 2007)
Editorial Board, The Open Tropical Medicine Journal (since 2007)
Editorial Board, Asian Pacific Journal of Tropical Medicine (since 2007)

Invited Speaker
18th International Conference of the Egyptian-German Society of Zoology (03/2008)
Humboldt-Universität Berlin (05/2008)
DFG-Meeting: German-African Cooperation Projects in Infectiology (06/2009)
58th Annual Meeting of the American Society of Tropical Medicine and Hygiene, Washington, USA (11/2009)

Organizer and Chairman
23. Tagung der Deutschen Gesellschaft für Parasitologie, Hamburg (03/2008)

Teaching
Universität Hamburg, Department für Biologie

Dr. Minka Breloer
Medical Microbiology Section

Head, Research Group Helminth Immunology

Invited Speaker
Seminar des SFB 643, Uniklinik Erlangen (01/2008)
Universität Regensburg (01/2008)
EFIS 2009 (Herbsttagung der DGfI mit den Europäischen immunologischen Gesellschaften) Berlin (09/2009)
32nd Symposium of the North-German Immunologists, Forschungszentrum Borstel (11/2009)
3rd German Meeting on Immune Regulation, Akademie Berlin-Schmöckwitz (06/2009)

Teaching
Universität Hamburg, Department für Biologie

Prof. Dr. Iris Bruchhaus
Parasitology Section

Ombudsman BNI
Vertrauensdozentin für Doktoranden
Mitarbeitervertreterin im Kuratorium

Organizer and Chairman
XVI Seminario Sobre Amibiasis and EMBO Workshop, Guadalajara, Mexiko (02/2009)

Teaching
Universität Hamburg, Department für Biologie

Prof. Dr. Gerd-D. Burchard
Tropical Medicine Section

Head, Clinical Research Group (associated)
Leiter Bernhard-Nocht-Klinik, Universitätsklinikum Hamburg-Eppendorf

Invited Speaker
5. Marburger Tag der Reise- und Tropenmedizin (02/2008)
Tag der Reisegesundheit 2008, BNI Hamburg (02/2008)
6. Arbeitstagung der Offiziere im Sanitätsdienst des Nordens, Damp (03/2008)
9. Forum Reisen und Gesundheit im Rahmen der Internationalen Tourismus-Börse ITB 2008, Berlin (03/2008)
11. Tübinger Tag der Impf- und Reisemedizin, Tübingen (03/2008)
48. Wissenschaftliche Jahrestagung der Deutschen Gesellschaft für Arbeitsmedizin und Umweltmedizin e.V., Hamburg (03/2008)
Seminar der Deutschen Gesellschaft für Verdauungs- und Stoffwechselkrankheiten, Essen (04/2008)
Reisemedizin aktuell 2008, Abteilung für Infektions- und Tropenmedizin der Universität München (04/2008)
XIII. Symposium Reise- und Impfmedizin, Auswärtiges Amt Berlin (04/2008)
Obleute-Tagung der Vereinigung Leitender Kinder- und Jugendärzte und Kinderchirurgen Deutschlands, Hamburg (04/2008)
42. Sitzung des KVH-Arbeitskreises Interdisziplinäre Infektiologie, Hamburg (05/2008)
Fortbildungsveranstaltung der Abteilung für Dermatologie, Krankenhaus St. Georg, Hamburg (05/2008)
23. Dialoge Health, Behörde für Soziales, Familie, Gesundheit und Verbraucherschutz (BSG), Hamburg (06/2008)
5. Arbeitsmedizinisches Sommersymposium 2008 der Impfakademie von GlaxoSmithKline, Erfurt (06/2008)
49. Seminar für ärztliche Fort- und Weiterbildung. Nordwestdeutsche Gesellschaft für ärztliche Fortbildung e.V., Westerland (06/2008)
11. Hamburger Impftag, Berufsverband der Kinder- und Jugendärzte e.V., Hamburg (06/2008)
Forum Hepatologie 2008, Hamburg (09/2008)
7. Interdisziplinäre Fortbildungsveranstaltung Infektiologie, St. Joseph-Hospital, Bremerhaven (09/2008)
Regionalforum Arbeitsmedizin 2008, Verband Deutscher Betriebs- und Werksärzte e.V., Lübeck (09/2008)
Symposium 2008: Impfen, Reisen und Gesundheit, 24. Kongress für Infektiologie, Tropenmedizin und Impfwesen, München (09/2008)
Klinisch-Pathologische Konferenz, Institut für Pathologie des Marienkrankenhauses, Hamburg (10/2008)
3. Symposium für Tropendermatologie und Reisemedizin, Hamburg (11/2008)
Gynäkologen-Workshop 2008, EuMeCom Impfakademie, Hamburg (11/2008)
Refresherkurs Tropenmedizin, BNI Hamburg (11/2008)
Hamburger Infektiologie-Update 2008, Institut für Interdisziplinäre Medizin, Hamburg (12/2008)
Institut für Transfusionsmedizin am Universitätsklinikum Schleswig-Holstein, Campus Kiel (01/2009)
Schutzimpfung aktuell, Ärztekammer Hamburg (02/2009)
Tag der Reisegesundheit 2009, BNI Hamburg (02/2009)
Kurs für Hygienebeauftragte, Universitätsklinikum Hamburg-Eppendorf (03/2009)
Nordbadisches Forum "Gesundheit und Sicherheit bei der Arbeit", Universität Mannheim (05/2009)
Hamburger Akademiekurs Innere Medizin, Vorbereitung auf die Facharztprüfung und Refresherkurs (05/2009)
Hamburg Port Health Center des Zentralinstituts für Arbeitsmedizin und Marine Medizin (02/2009)
Sitzung des Advisory Boards der EuMeCom Impfakademie, Berlin (07/2009)
6. Arbeitsmedizinisches Sommersymposium 2009 der Impfakademie von GlaxoSmithKline, Erfurt (07/2009)
25. Kongress für Infektiologie, Tropenmedizin und Impfwesen, Bayerische Gesellschaft für Immun-, Tropenmedizin und Impfwesen, München (09/2009)
Refresherkurs Diplomkurs Tropenmedizin, DTG-Refresherkurs. BNI Hamburg (11/2009)
EuMeCom Impfakademie, Hamburg (11/2009)
6. Marburger Tag der Reise- und Tropenmedizin, Klinikum Lahnberge der Philipps-Universität Marburg (11/2009)
Institut für Interdisziplinäre Medizin, Hamburg (12/2009)

Membership in Committees and Advisory Boards
Ausschuss "Reisemedizin" der Deutschen Gesellschaft für Tropenmedizin und Internationale Gesundheit e.V. (seit 1993)
Koordinator, Ausschuss "Leitlinienentwicklung" der Deutschen Gesellschaft für Tropenmedizin und Internationale Gesundheit e.V. (seit 1997)
Arbeitskreis Infektiologie im Bund Deutscher Internisten (seit 2003)
Wissenschaftlicher Beirat der Deutschen Akademie für Flug- und Reisemedizin (seit 1997)
Wissenschaftlicher Beirat Forum Reisen und Medizin e.V. (seit 2001)
Außerordentliches Mitglied, Arzneimittelkommission der Deutschen Ärzteschaft (seit 1994)
Ständige Arbeitsgemeinschaft der Kompetenz- und Behandlungszentren " StAKoB (seit 2003)
Arbeitskreis Schutzstufe 4 Patientenstation. Amt für Arbeitsschutz, Behörde für Soziales, Familie, Gesundheit und Verbraucherschutz " BSG, Hamburg (seit 2008)

Editorial Activities
Associate Editor, Journal of Travel Medicine (since 2003)

Offices and Posts
Vorsitzender, Deutsche Gesellschaft für Tropenmedizin und Internationale Gesundheit e.V.(2005-2009)

PD Dr. Joachim Clos
Parasitology Section

Head, Research Group Leishmaniasis

Invited Speaker
IFoLeish, Universität Heidelberg (04/2008)
Institut für Mikrobiologie, Charité, Humboldt-Universität Berlin (12/2009)

Membership in Committees and Advisory Boards
Hamburger Kommission für Fragen der Gentechnik (since 2002)

Dr. Stephan Ehrhardt
Tropical Medicine Section

Awards
2009 Clinical Infectious Diseases Award for Outstanding Review (11/2009)

Invited Speaker
Akademie für Rettungsdienst und Gefahrenabwehr der Feuerwehr Hamburg (2008/2009)
Refresherkurs Tropenmedizin der Deutschen Deutsche Gesellschaft für Tropenmedizin und Internationale Gesundheit e.V. (11/2008)
Tag der Reisegesundheit, Hamburg (02/2009)
DTG-Grundkurs zur Erlangung des Zertifikats "Reisemedizin" (04/2009)
Medizinmesse "Medica", Düsseldorf (11/2009)

Membership in Committees and Advisory Boards
Vorstandsmitglied, Deutsche Gesellschaft für Tropenmedizin und Internationale Gesundheit e.V.(since 2009)

Teaching
Universität Hamburg, Fachbereich Medizin
Landesfeuerwehrschule Hamburg

Dr. Petra Emmerich
Medical Microbiology Section

Invited Speaker
Friedrich-Löffler-Institut, Insel Riems (09/2008)
Novartis, Berlin (10/2008)
Bundeswehrkrankenhaus, Fachbereich Tropenmedizin, Hamburg (12/2008)
Universität Rostock (01/2009)
Überseeclub Hamburg, Vergabe des Naturwissenschaftspreises 2008 (01/2009)
Sanitätsakademie der Bundeswehr, München (05/2009)

Dr. Torsten Feldt
Tropical Medicine Section

Organizer and Chairman
Conference Advances in Medicine Continuing Medical Education, Kumasi, Ghana (09/2009)

Prof. Dr. Bernhard Fleischer
Medical Microbiology Section

Head, Department of Immunology
Lehrstuhl (C4) für Immunologie/Tropenmedizin an der Universität Hamburg
Direktor, Institut für Immunologie, Universitätsklinikum Hamburg-Eppendorf

Editorial Activities
Editor-in-Chief, Medical Microbiology and Immunology (since 1990)
Associate Editor, Clinical and Developmental Immunology (since 2007)
Member, Editorial Team, TropIKA.net, WHO, TDR (since 2009)
Member Editorial Board, International Journal of Medical Microbiology (since 2000)
Member Editorial Board, Tropical Medicine and International Health (since 2000)
Member Editorial Board, The Open Immunology Journal (since 2007)
Member Editorial Board, Asian Pacific Journal of Tropical Medicine (since 2008)

Membership in Committees and Advisory Boards
Mitglied des Wissenschaftlichen Beirats, Zentrum für Infektionsforschung, Universität Ulm (2001-2008)
Mitglied des Wissenschaftlichen Beirats, Robert-Koch-Institut, Berlin (1999-2008)
Mitglied der Evaluierungskommission, SFB 544, Universität Heidelberg (04/2008)
Mitglied der Evaluierungskommission, Forschungsstation Nouna, Burkina Faso (01/2008)
Member, Scientific and Technical Advisory Committee, Unicef/UNDP/World Bank/Who Special Programme for Research and Training in Tropical Diseases (since 2003)
Member, National Academy of Sciences, Leopoldina (since 1995)
Member, R&D Expert Group on Countering the Effects of Biological and Chemical Terrorism, European Commission (since 2003)
Member, Selection Committee, European NTD-Fellowship-Programme, Bamako, Mali (09/2008)
Mitglied des Sachverständigenrates, Institut für Medizinische und Pharmazeutische Prüfungsfragen (since 1991)
Kommission zur Evaluierung des Paul-Ehrlich-Instituts durch den Wissenschaftsrat (09/2009)
Kommission zur Evaluierung des Sonderforschungsbereiches der Universität Würzburg durch die DFG (09-10/2009)
Mitglied des Auswahlausschusses, Georg-Forster-Programm der Alexander-von-Humboldt-Stiftung (seit 2003)
Mitglied des Kuratoriums, Werner-Otto-Stiftung Hamburg (seit 2003)
Sprecher, Netzwerk für Parasiten, tropische und vektorübertragene Erkrankungen, Infektionsepidemiologisches Netzwerk des RKI (seit 2009)

Invited Speaker
Universität Greifswald (05/2008)
2nd International Conference on Biotechnology, Yarmouk University, Irbid, Jordanien (11/2008)
University of Antiochia, Medellin, Kolumbien (11/2009)
Außenhandelsausschuss der Handelskammer Hamburg (10/2009)
South Eastern European Immunology School, Ohrid, Mazedonia (10/2009)

Organizer and Chairman
Chairman, Conference, European Association for the Study of the Liver (EASL), Hamburg (12/2008)
Chairman, Internationales Georg-Foster- Kolloquium der Alexander von Humboldt-Stiftung, Bonn (04/2008)
Chairman, European Congress of Immunology, Berlin (09/2010)

Teaching
University of Hamburg, Faculty of Medicine

Prof. Dr. Rolf Garms
Medical Microbiology Section

Invited Speaker
13thAnnual River Blindness Program Review Agenda, Atlanta, USA (02/2009)
Uganda Onchocerciasis Elimination Committee Meeting, Kampala, Uganda (08/2009)

Membership in Committees and Advisory Boards
Uganda Onchocerciasis Elimination Committee (UOEC), Ministry of Health, Kampala, Uganda (since 2008)

Dr. Tim-Wolf Gilberger
Parasitology Section

Head, Research Group Malaria II

Invited Speaker
Universitätsklinikum Heidelberg (06/2008)
UniversitätsklinikumHamburgEppendorf (07/2008)
McMaster University, Hamilton, Kanada (10/2008)
Universitätsklinikum Lübeck (06/2009)
Schweizer Tropeninstitut, Basel, Schweiz (05/2009)
McMaster University, Hamilton, Canada (03/2009)

Membership in Committees and Advisory Boards
Wissenschaftliches Komitee und Chairman, Jahrestagung der Deutschen Gesellschaft für Parasitologie (03/2008)
Wissenschaftliches Komitee der Jahrestagung der Paul-Ehrlich-Gesellschaft für Chemotherapie e.V. (11/2009)

Teaching
University of Hamburg, Department of Biology

Prof. Dr. Stephan Günther
Medical Microbiology Section

Head, Department of Virology

Membership in Committees and Advisory Boards
Member, International Scientific Council of the BSL-4 Laboratory in Lyon, Frankreich (seit 2004)

Invited Speaker
COST ACTION B 28, Meeting, Bukarest, Rumänien (09/2008)
Biosafety Europe, Meeting, Hannover (06/2008)
Conference on Filoviruses, Libreville, Gabun (03/2008)
FEBS Advanced Lecture Course, Pathogen"Host Interplay, Potsdam und Berlin (07/2008)
Tierärztliche Hochschule Hannover (01/2009)
2nd Workshop to Further Develop the EDP Lab. Network for Outbreak Response and Readiness, Genf (02/2009)
ENIVID Collaborative Laboratory Response Network, Prag (05/2009)

Teaching
University of Hamburg, Faculty of Medicine
University of Hamburg, Studiengang Biochemie/Molekularbiologie

Dr. Guido Hegasy
Medical Microbiology Section

Teaching
University of Hamburg, Faculty of Medicine
University of Applied Sciences, Hamburg, Rescue Engineering

PD Dr. Volker Heussler
Parasitology Section

Head, Research Group Malaria I

Editorial Activities
Editorial Board, Trends in Parasitology (since 2007)
Editorial Board, PLoS ONE (since 2008)
Editorial Borad, Transboundary and Emerging Disease (since 2008)

Invited Speaker
MAM 2008, Lorne, Australien (02/2008)
Universität Würzburg (05/2008)
Universität Dresden (06/2008)
1st AHRO International Malaria Symposium. Accra, Ghana (08/2008)
European Multicolloquium of Parasitology, Paris, Frankreich (08/2008)
EMBO Meeting, Villars sur Orlons, Schweiz (08/2008)
Institut für Zellbiologie, Bern, Schweiz (02/2009)
Institut für Biochemie, Lausanne, Schweiz (04/2009)
Forschungszentrum Borstel (06/2009)
61. Jahrestreffen der Deutschen Gesellschaft für Hygiene und Mikrobiologie, Göttingen (09/2009)
Gordon Conference 2009, Oxford, UK (09/2009)

Organizer and Chairman
Wissenschaftliches Komitee, DGP Malaria Meeting, Hamburg (02/2008)
INNOVAC Jahrestreffen, EU-Konsortium, Hamburg (07/2009)

Teaching
University of Hamburg, Department of Biology

Prof. Dr. Rolf Horstmann
Tropical Medicine Section

Chairman, Board of Directors
Head, Department of Molecular Medicine
Chair for Tropical Medicine III, Medical Faculty, University of Hamburg

Membership in Committees and Advisory Boards
Scientific Advisory Board (ex officio) of the Robert Koch Institute (since 2008)
Scientific Advisory Board, Deutsche Gesellschaft für Tropenmedizin und Internationale Gesundheit e.V. (2007-2009)
Working Group Molecular Medicine, Telematik platform des Bundesministeriums für Bildung und Forschung (seit 2006)

Invited Speaker
DGI-Congress, Innsbruck, Austria (04/2008)
Annual Meeting of the German Society for Human Genetics, Hanover (04/2008)
Leopoldina Meeting on Infection Genetics, Max Planck Institute for Infection Biology, Berlin (09/2008)
Ferienakademie of the Cusanus-Foundation, Freckenhorst near Münster (09/2008)
EMBO Conference on Host Genetics of Infection, Institut Pasteur, Paris (10/2009)
101. Annual Meeting of the German Society for Tropical Medicine and International Health., Munich (11/2009)
Bioloquium, Seminar series organized by students of Technicl University, Munich (12/2009)

Organizer and Chairman
Chairman, Genetics of Parasitism, International Congress of Human Genetics, Berlin (07/2008)
GTZ-Workshop on Research on Tropical Diseases, Berlin (03/2009)

Teaching
University of Hamburg, Faculty of Medicine

PD Dr. Thomas Jacobs
Medical Microbiology Section

Membership in Committees and Advisory Boards
Scientific Committee, ATIP Microbiology Programme, Centre National de la Recherche Scientifique, France
Scientific Committee, Agence diÉvaluation de la Recherche et de liEnseigement Supérieur, France

Invited Speaker
British Society of Parasitology, Newcastle, UK (03/2008)
Akademie der Wissenschaften, Prag, Tschechien (09/2008)
EASL Monothematic Conference on Immune Mediated Liver Injury, Hamburg (12/2008)

Organizer and Chairman
Chairman, Jahrestagung der Deutschen Gesellschaft für Parasitologie (10/2008)

Teaching
University of Hamburg, Department of Biology
University of Hamburg, Studiengang Biochemie/Molekularbiologie

Dr. Marc Jacobsen
Medical Microbiology Section

Teaching
University of Hamburg, Department of Biology
University of Hamburg, Studiengang Biochemie/Molekularbiologie

Dr. Christian Keller
Medical Microbiology Section

Teaching
University of Hamburg, Faculty of Medicine
University of Applied Sciences, Hamburg, Rescue Engineering

Dr. Birte Kretschmer
Medical Microbiology Section

Awards
Heinrich Pette-Promotionspreis für Neurologie und Immunologie 2009

Prof. Dr. Jürgen May
Tropical Medicine Section

Head, Research Group Infectious Disease Epidemiology

Membership in Committees and Advisory Boards
Arbeitskreis Malaria-Therapie der Paul-Ehrlich-Gesellschaft (seit 2003)
Data Monitoring Committee, Sanofi Synthelabo Recherche (since 2006)
Scientific Board, KCCR, Kumasi, Ghana (since 2008)

Editorial Activities
Editorial Board, Tropical Medicine and International Health (since 2006)

Invited Speaker
23. Jahrestagung der Deutschen Gesellschaft für Parasitologie, Hamburg (03/2008)
9. Kongress für Infektiologie und Tropenmedizin, Innsbruck, Österreich (02/2008)
3. Jahrestagung der Deutschen Gesellschaft für Epidemiologie, Bielefeld (09/2008)
Carl Friedrich von Weizsäcker-Institut für Naturwissenschaft und Friedensforschung, Hamburg (01/2009)
Expertentreffen B-Waffen-Übereinkommen (BWÜ), Vereinte Nationen, Genf (08/2009)
101. Jahrestagung der Deutschen Gesellschaft für Tropenmedizin und Internationale Gesundheit e.V., München (11/2009)
Summerschool, Universität Bielefeld (09/2009)

Organizer and Chairman
Chairman, 6. Herbsttagung er Sektion Antiparasitäre Chemotherapie der Paul-Ehrlich-Gesellschaft und der DTG (11/2008)
Chairman, 101. Jahrestagung der Deutschen Gesellschaft für Tropenmedizin und Internationale Gesundheit e.V., München (11/2009)
Chairman, 7. Malariatreffen von Paul-Ehrlich-Gesellschaft für Chemotherapie und der Deutschen Gesellschaft für Tropenmedizin und Internationale Gesundheit e.V., Hamburg (12/2009)

Teaching
University of Hamburg, Faculty of Medicine
Freie Universität Berlin, Department of Veterinary Medicine
University of Applied Sciences, Hamburg, Faculty Life Sciences

Prof. Dr. Christian G. Meyer
Tropical Medicine Section

Editorial Activities
Editorial Board, Tropical Medicine and International Health (since 2001)

Invited Speaker
Auswärtiges Amt, Berlin (04/2008)
International Vaccine Institute, Seoul, Südkorea (09/2008)
Lufthansa, Aeromedical Centre, Wiesbaden (03/2008, 11/2008)
Hygieneforum Siegen (10/2008)
Akademie für Rettungsdienst und Gefahrenabwehr der Landesfeuerwehrschule Hamburg (11/2008)
Fortbildungskongress der MEDICA (11/2008)
Eröffnung der Tropenpädiatrischen Ambulanz des UKE, Hamburg (11/2008)
Biomerieux Symposium, Köln (01/2009)
Bund Deutscher Internisten, Berlin (03/2009)
Lufthansa, Aeromedical Centre, Wiesbaden (03/2009, 11/2009)
Ärztekammer Lüneburg (04/2009)
Symposium Reisemedizin, Auswärtiges Amt, Berlin (06/2009)
HIV-Symposium, Erfurt (06/2009)
Reisemedizin-Symposium, Osnabrück (08/2009)
Verband Deutscher Betriebs- und Werksärzte, Lübeck (10/2009)
Akademie für Rettungsdienst und Gefahrenabwehr der Landesfeuerwehrschule Hamburg (10/2009, 11/2009)
Rotary International, Lüchow (10/2009)
Impfsymposium der Ärztekammer Schleswig-Holstein (11/2009)

Organizer and Chairman
Chairman, 101. Jahrestagung der Deutschen Gesellschaft für Tropenmedizin und Internationale Gesundheit, München (11/2009)

Teaching
University of Hamburg, Faculty of Medicine

Dr. Ingrid B. Müller
Parasitology Section

Invited Speaker
Universität Zürich, Schweiz (04/2009)
University of Manchester, UK (05/2009)

Teaching
University of Hamburg, Department of Biology

Dr. Sven Poppert
Parasitology Section

Invited Speaker
Universität Rostock (05/2008)
Evangelisches Krankenhaus Herne (04/2008)
Deutsches Rotes Kreuz, Breitscheid (12/2008)
Friedrich-Löffler-Institut, Jena (06/2009)
DELAB-Fachtagung, Mainz (09/2009)
Biotechnica, Hannover (10/2009)

Prof. Dr. Paul Racz
Tropical Medicine Section

Head, Department of Pathology

Membership in Committees and Advisory Boards
Wissenschaftlicher Beirat, Kompetenznetzwerk HIV/AIDS (seit 2001)
Project Management Committee, "Improved Vaccine Efficiacy via Dendritic Cells and Flavivirus Vectors", Grand Challenges in Global Health, Bill and Melinda Gates Foundation (since 2005)
Project Committee, TIP-VAC, EU-Projekt (since 2005)
Project Committee, DEC-VAC, EU-Projekt (since 2006)

Invited Speaker
MIVAC International Conference, Göteborg, Schweden (01/2008)
Workshop Immunaktivierung bei HIV, Hamburg (11/2008)

Teaching
University of Hamburg, Faculty of Medicine

Dr. Jonas Schmidt-Chanasit
Medical Microbiology Section

Organizer and Chairman
Chairman, Joint International Tropical Medicine Meeting, Mahidol University, Bangkok, Thailand (10/2008)
Chairman, Joint International Tropical Medicine Meeting, Mahidol University, Bangkok, Thailand (12/2009)
Delegations
Delegationsbegleitung Bundesminsterium für Gesundheit, GHASAG (12/2008)

Teaching
University of Frankfurt/Main, Faculty of Medicine

Dr. Michael Schreiber
Medical Microbiology Section

Invited Speaker
Biacore Anwendertreffen 2009, Universität Hamburg (12/2009)

Teaching
Wissenschaftliche Hochschule für Unternehmensführung Vallendar, Studium generale

Dr. Tobias Spielmann
Parasitology Section

Invited Speaker
Universitätsklinikum Heidelberg (06/2008)
Queensland Institute of Medical Research, Brisbane, Australien (02/2008)
Menzies Research Institute, Hobart, Australien (02/2008)
The Walter and Eliza Hall Institute of Medical Research, Melbourne, Australien (02/2008)
Horizons in Molecular Biology 2009, Universität Göttingen (09/2009)
University of Geneva (03/2009)

Organizer and Chairman
Chairman Meeting of the German Society for Parasitology, Hamburg (03/2008)

Dr. Angelika Sturm
Parasitology Section

Awards
Leibniz-Nachwuchspreis 2009, Kategorie Natur- und Technikwissenschaften

Prof. Dr. Egbert Tannich
Parasitology Section

Head, Department of Molecular Parasitology
Lehrstuhl (C4) für Molekulare Parasitologie/Tropenmedizin an der Universität Hamburg

Editorial Activities
Editorial Board, Molecular and Biochemical Parasitology (since 1994)
Editorial Board, Parasitology International (since 1998)
Editorial Board, Parasitology Research (since 2002)

Invited Speaker
6. Biomerieux-Symposium, München (01/2008)
London School of Hygiene and Tropical Medicine, London, UK (02/2008)
Tag der Reisegesundheit, Hamburg (02/2008)
9. Kongress für Infektiologie und Tropenmedizin, Innsbruck, Österreich (02/2008)
6. Mikrogen Frühjahrssymposium, München (05/2008)
Bundeswehrkrankenhaus Hamburg (07/2008)
XVIth Japanese-German Cooperative Symposium on Protozoan Diseases, Göttingen (09/2008)
XVIIth International Congress for Tropical Medicine and Malaria, Jeju, Korea (10/2008)
EASL Monethematic Conferences, Hamburg (12/2008)
Annual Conference of the Israel Society for Parasitology, Tel Aviv, Israel (12/2008)
Bundeswehrkrankenhaus Hamburg (07/2009)
University of Leiden, The Netherlands (10/2009)
101. Jahrestagung der Deutschen Gesellschaft für Tropenmedizin und Internationale Gesundheit e.V., München (11/2009)
Robert-Koch-Institut, Wernigerode (11/2009)

Membership in Committees and Advisory Boards
Wissenschaftlicher Beirat, Kompetenzzentrum PathoGenoMik Würzburg (seit 2002)
Wissenschaftlicher Beirat, Qualitätssicherungskommission der Deutschen Gesellschaft für Hygiene und Mikrobiologie (DGHM), Bereich Ringversuche Parasitologie (since 2003)
Wissenschaftlicher Beirat, Deutsche Gesellschaft für Parasitologie (since 2004)
Wissenschaftlicher Beirat, Deutsche Gesellschaft für Tropenmedizin und Internationale Gesundheit e.V. (since 2005)
Fachberater, Institut für Standardisierung und Dokumentation im medizinischen Laboratorium (since 2005)
Ringversuchsleiter, Institut für Standardisierung und Dokumentation im medizinischen Laboratorium (since 2005)
Fachberater, Bundesärztekammer, Berlin (since 2009)

Offices and Posts
Ringversuchsleiter, Institut für Standardisierung und Dokumentation im medizinischen Laboratorium (since 2005)

Organizer and Chairman
Organisator und Präsident, 23. Jahrestagung der Deutschen Gesellschaft für Parasitologie, Hamburg (03/2008)
Organizing Committee and Chairman, XVI. Seminario sobre amibiasis, Guanajuato, Mexico (02/2009)
Chairman, Jahrestagung der Deutschen Gesellschaft für Hygiene und Mikrobiologie (DGHM), Göttingen (09/2009)
Wissenschaftliches Komitee und Chairman, 101. Jahrestagung der Deutschen Gesellschaft für Tropenmedizin und Internationale Gesundheit e.V., München (11/2009)

Teaching
University of Hamburg, Faculty of Medicine

Prof. Dr. Rolf D. Walter
Parasitology Section

Head, Research Group Biochemistry

Editorial Activities
Editor, Tropical Medicine and International Health (since 1996)
Editorial Board, Molecular and Biochemical Parasitology (since 1986)

PD Dr. Carsten Wrenger
Parasitology Section

Invited Speaker
Department of Pharmacology, Sao Paulo Medical School, Brazil (11/2008)
Department of Microbiology, Sao Paulo Medical School, Brazil (12/2008)
Department of General Physiology, Institute for Bioscience, University of Sao Paulo, Brazil (12/2008)
Institute of Biochemistry, University of Sao Paulo, Brazil (12/2008)
Universität Düsseldorf (01/2009)

Teaching
University of Hamburg, Department of Biology
University of Sao Paulo, Brazil, Institute of Biochemistry, Gastprofessor (11-12/2008)

04.02. – 15.02.08 "Medicine in the Tropics"

01.04. – 27.06.08 Diploma course "Tropical Medicine"

24.04.08 Girls' Day

Prof. S. Dhar

Dr. K. Rankin

22.05.08 Annual sports festival "BNI open"

06.10.08 Symposium organized by the Armed Forces

CHRONICLE

01.01.08
The Institute becomes a Foundation under Public Law and thereby is granted greater autonomy and freedom to operate. The supervisory function of the Board of Trustees and in-depth examinations of the annual budget allocations safeguard a continuing careful and close guidance by the public stakeholders.

04.02.08 – 15.02.08
Training of 22 medical support staff in the course "Medicine in the Tropics".

01.04.08 – 27.06.08
Diploma course "Tropical Medicine"- designed for physicians but including a number of veterinarians, pharmacists and natural scientists – hosts 42 students.

24.04.08
Girls' Day: Guided by scientific staff godmothers and godfathers, about 50 school children of Hamburg gain some insight into the work of the Institute. Virologist Petra Emmerich gives a seminar on dangerous viruses.

08.05.08
The Board of Directors welcomes Ms Maria Becker, the administrator in the Federal Ministry of Health responsible for the Institute.

22.05.08
The annual sports festival "BNI open" brings together 50 institute members, 23 students of the Diploma Course and 7 members of the Department of Tropical Medicine of the Federal Armed Forces – the favorite is beach volleyball with a tournament of 9 teams cheered by 43 fans.

28.05.08
Humboldt Fellow Prof. Suman Dhar from New Delhi spends a three-month´s sabbatical in the Institute, studying in Tim Gilberger´s group the cell biology of malaria parasites.

11.07.08
Participating in a consortial grant application to the National Genome Research Network NGFNplus "Systematic Genomics of Chronic Inflammatory Barrier Diseases – A Network on Environmental Disorders" (coordinator S. Schreiber, Kiel), Christian Meyer and Rolf Horstmann are awarded 450,000 € from the Federal Ministry of Education and Research (BMBF) for genetic studies on tuberculosis.

06.10.08
A symposium organized by the Armed Forces for active and former general phy-sicians, admiral doctors, pharmacists and general stage manager of veterinary medicine takes place in the Institute.

07.11.08
Visit of a delegation from Shanghai, China, led by Vice Mayor and scientist Shen Xiaoming.

21.11.08
Meeting of the Institute´s Board of Trustees.

08.12.08 – 12.12.08
Together with scientists of the Robert Koch Institute, Jonas Schmidt-Chanasit represents Germany at an international workshop on viral haemorrhagic fevers in Winnipeg, Canada. The challenge is to reliably diagnose viruses of the Biosafety Levels 3 and 4 categories. It was reported that the German delegation performed best.

12/2008
For a "European Virus Archive" Stephan Günther raises 670,000 € from the European Commission.

28.01.09
Ernst Rietschel, president of the Leibniz Association, visits the Institute.

02.02.09 – 20.02.09
The course "Medicine in the Tropics" for medical support staff is extended to three weeks", 20 students are recorded.

01.04.09 – 26.06.09
The Diploma Course "Tropical Medicine" hosts 40 participants.

22.04.09
Prof. Bernard Lafont, Inspector General of the Medical Services of the French Army, visits the institute, accompanied by his German colleague, Lieutenant General, Medical Corps, Dr. Kurt-Bernhard Nakath.

23.04.09
"Girls' Day" and "For Boys": Boys for the first time are invited to the institute, 53 girls and boys attend. Molecular parasitologist Iris Bruchhaus gives a seminar on parasites.

01.05.09
Dr. Kathleen Rankin from the USA joins Volker Heussler´s group with a Humboldt fellowship studying host cell factors in the development of malaria parasites in the liver.

09.05.09 – 13.05.09
Rolf Horstmann is part of a delegation of the Leibniz Association travelling to Taiwan.

14.05.09
"BNI open" 2009. A total of 90 athletes from the Institute, the Bundeswehr Department for Tropical Medicine and the Diploma Course take part in the Institute´s sports festival. New attendance record of 51 fans.

07.11.08 Visit from Shanghai

21.11.08 Meeting of the Board of Trustees

28.01.09 Prof. Rietschel visits the Institute

02.02. bis 20.02.09 "Medicine in the Tropics"

01.04. bis 26.06.09 Diploma Course "Tropical Medicine"

22.04.09 French and German Army Chief Physicians

09.05. bis 13.05.09 Leibniz-Delegation travels to Taiwan

14.05.09 "BNI open" 2009

06/09 – 12/09 Public lecture series of "Year of Science"

09.07.09 Capstone laid

13.07.09 Inauguration with Federal Minister of Health Ursula Schmidt and Hamburg´s First Mayor Ole von Beust

02.06.09
Dr. Stephan Ehrhardt will conduct the first multicenter controlled clinical trial organized by a member of the Institute. He is granted funding of over 1,100,000 € by BMBF to study the effectiveness of the commonly used yeast preparation Perenterol® - "Probiotic *Saccharomyces boulardii* for the prevention and treatment of antibiotic-associated diarrhoea – a randomised, double blind, placebo controlled trial". It is the largest clinical study funded by the BMBF thus far.

06/09 – 12/09
In the "Year of Science" 2009 the Institute contributes a public lecture series to the "Research Expedition Germany".

03.07.09
50 members of the German Journalists´ Association and the association "Free and Young Journalists" visit the Institute.

09.07.09
Capstone laid in the extension building.

13.07.09
Inauguration of the extension building celebrated by the Federal Minister of Health Ulla Schmidt, Hamburg´s First Mayor Ole von Beust and many other honourable guests.

14.09.09
Kick-off event of the "Leibniz week of biodiversity" in the Institute – one of the most important contributions to the "Year of Science".

25.09.09
Members of the deputation of the Hamburg Ministry of Health and the Hamburg Ministry of Science and Research visit the Institute.

01.10.09
Humboldt Fellow Dr. Nadia Ben Nouir from Monastir, Tunisia, starts a research project in the Immunology Department. Her focus is the heat shock protein HSP60 of the nematode *Strongyloides ratti* and its influence on the host´s immune system.

09.10.09
Visit of a group "Hospital Management Asia" of the InWent agency for international capacity building and development.

07.11.09
"3rd Science Night of Knowledge" in Hamburg: More than 2,000 visitors are offered a varied programme by 90 helpers and speakers of the Institute.

10.11.09
Evaluation by the Leibniz Association, 19 reviewers pay a two days´ site visit to the Institute.

17.11.09
Jointly with colleagues of the European ScreeningPort, Carsten Wrenger receives a grant of 400,000 € from the Hamburg Ministry of Science and Research for "Drug development for the prevention and treatment of malaria".

27.11.09
At the annual meeting of the Leibniz Association Angelika Sturm receives the Leibniz Newcomer Award endowed with 3,000 € in the category of natural and technical sciences. In her doctoral thesis she describes a previously unknown developmental stage of malaria parasites.

04.12.09 – 05.12.09
The 7th Malaria Meeting of the Paul Ehrlich Society and the German Society for Tropical Medicine and International Health is held in the historic lecture hall of the Institute. Jürgen May organizes the scientific programme on malaria, malaria parasites and their vector mosquitoes.

25.12.09
As part of a collaborative research initiative "Inflammation of the Liver: Infection, Immune Regulation, and Consequences" (SFB 841, coordinator A. Lohse, UKE) three projects with a total funding of 1,100,160 € are granted to Volker Heussler, Thomas Jacobs and Egbert Tannich.

18. 12.09
Dr. Birte Kretschmer is awarded the "Heinrich Pette Doctoral Thesis Prize for Neurology and Immunology 2009". In her award-winning doctoral thesis, she showed the influence the CD83 protein on the activity and in particular the influence on the production of antibodies by B lymphocytes.

Dr. N. Ben Nouir

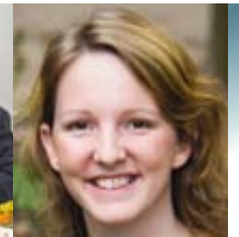
09.10.09 Visit from Asia

07.11.09 3rd Science Night of Knowledge

PD Dr. S. Erhardt

10.11.09 Evaluation by the Leibniz Association

Awards for Dr. A. Sturm and Dr. B. Kretschmer



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