DBM FACTS

Periodisches Informationsblatt des Departementes Biomedizin
Universität Basel, Universitätsspital Basel und
Universitäts-Kinderspital beider Basel

Immunity and Pathogenesis in Viral Infection | «Moving to Basel» | Experiments on 700m²

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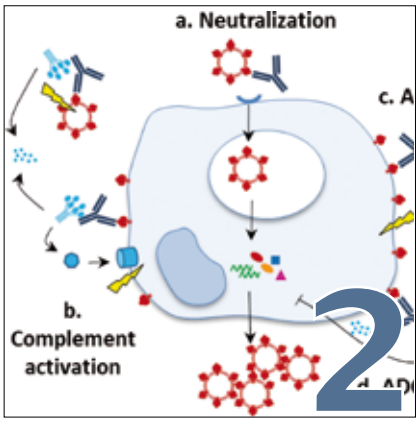
Departement Biomedizin Basel



Immunity and Pathogenesis in Viral Infection
from Daniel Pinschewer

DBM Research Day

«Moving to Basel»
from Felicity Wollseifen

Frühlings- und Osterliteratur für Klein und Gross

Experiments on 700m²
from Melanie Neutzner

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Ukrainian easter eggs galore with tassels at the Pysanka Paradise family festival in Ivana Franka Park in Kiev, Ukraine

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EDITORIAL

Radek Skoda
Leiter DBM

Liebe Leserinnen und Leser

Seit dem Erscheinen der letzten Ausgabe gibt es manch Positives zu berichten: Der Research Day war ein voller Erfolg und auch der Besuch des Advisory Boards hat uns wertvolle neue Impulse gegeben (Seite 8). Eine externe Mitarbeiterbefragung, die im Auftrag des USB durchgeführt wurde, hat ergeben, dass das DBM der Bereich mit der grössten Mitarbeiterzufriedenheit ist (Seite 23). Ein Ansporn für uns, diesen Weg weiter zu beschreiten.

Carolyn King von der Forschungsgruppe «Transplantation Immunology and Nephrology» hat eine SNF-Förderprofessur erhalten, ein weiterer Grund zur Freude. Die FACS Core Facility konnte personell ausgebaut werden und als drittes Mitglied hat Danny Labes per 1. März 2015 seine Tätigkeit als Leiter der FACS Core Facility aufgenommen. Wir wünschen beiden viel Erfolg und gutes Gelingen!

In dieser Ausgabe steht die Forschung von Daniel Pinschewer und seinem Labor «Experimental Virology» im Mittelpunkt (ab Seite 2). Aktuelle Publikationen runden den wissenschaftlichen Teil ab (ab Seite 12). Nicht weniger wichtig für Forschende ist der Artikel von Felicity Wollseifen von der Wohnvermittlung USB, die ganz pragmatische Hinweise für ein gutes Ankommen und Leben in der Regio Basiliensis gibt (ab Seite 10). Den Frühling erleben können Sie literarisch ab Seite 24 oder ganz handfest mit Melanie Neutzner bei der Gartenarbeit (ab Seite 26). Was Sie auch vorziehen, viel Freude bei der Lektüre und schöne Ostertage!

Dear Readers

There are many positives to report since the publication of the last issue: The Research Day was a great success and the visit of the Advisory Boards has filled us with meaningful new momentum (page 8). A staff survey carried out by an external agency on behalf of the USB has shown that the DBM is the department with greatest staff satisfaction (page 23). This is a good incentive for us to continue on the same path.

Another reason to celebrate is the awarding of a SNF professorship to Carolyn King from the "Transplantation Immunology and Nephrology" research group. Staff numbers at the FACS Core Facility have increased and Danny Labels has become the third member, taking up his position as director of the FACS Core Facility from the 1st of March 2015. We wish them both all the best and every success!

The research of Daniel Pinschewer and his "Experimental Virology" group is a focus point of this issue (page 2) and recent publications round off the scientific portion (from page 12). No less important for researchers is the article by Felicity Wollseifen of the USB Accommodation Services who gives pragmatic advice on moving to, and living in, the Basel region (from page 10). You can literally enjoy the spring from page 24, or join Melanie Neutzner in some garden work (from page 26). Whatever your preference I hope that you all enjoy this issue and wish you all the best for Easter!

Immunity and Pathogenesis in Viral Infection

The Experimental Virology group relocated from Geneva to Basel in January 2014. Since then it has grown new roots in the Haus Petersplatz where several new team members have joined, to the point that we are approaching our limits in space. Our research focuses on virus-host interactions with an emphasis on persistent infection. We mostly use lymphocytic choriomeningitis virus (LCMV) as a model infection. We thereby investigate several aspects of antiviral immune protection as well as of immunopathology. Ongoing projects address, amongst others, the protection afforded by antiviral antibodies, the role of alarmins in antiviral immunity and the pathogenesis of viral hemorrhagic fever. By developing novel virally vectored vaccines, for example against tuberculosis, we also work on the prevention of microbial infections.

The Experimental Virology lab (from left to right):
Mehmet Sahin, Min Lu, Sandra Kallert, Weldy Bonilla, Magdalena Krzyzaniak, Cornelia Reading, Melissa Remy, Kerstin Schmidt, Karen Cornille, Daniel Pinschewer, Nadège Lagarde, Bénédict Fallet, Yusuf Ertuna.

Lymphocytic choriomeningitis virus (LCMV) infection of mice

LCMV is a natural mouse pathogen, which has been widely used for almost a century to study viral persistence, immunological tolerance, and immunopathogenesis. Research with this pathogen has contributed several milestone discoveries and concepts of importance for immunology and for persistent infection in particular. LCMV belongs to the *Arenaviridae*, a viral *family* which also comprises Lassa Virus (LASV) and the South American hemorrhagic fever viruses. Virtually all arenaviruses known to date cause an asymptomatic chronic infection of their natural rodent host but several of them can cause severe disease upon transmission to humans (see below). Arenaviruses are enveloped and carry a bisegmented negative stranded RNA genome with a large (L) and a short (S) segment (Fig. 1). Each of them carries two genes in an ambisense coding strategy. The viral RNA-dependent RNA polymerase (L) and the matrix protein (Z) are expressed from the L segment, whereas the S segment encodes for the nucleoprotein (NP) and the glycoprotein (GP). GP is the only protein at the surface of the virion and therefore the only target of neutralizing antiviral antibodies.

LCMV reverse genetics and development of LCMV-based vaccine vectors

Research using the LCMV model can benefit from a wealth of specific knowledge and tools that have been created over several decades. We and others have developed reverse genetic techniques[1], allowing us to tailor the infectious virus at will for our experimental purposes. Briefly, cDNAs of the S and L segments have been inserted into polymerase I (pol-I) driven expression cassettes, while the minimal viral trans-acting factors, NP and L protein, are co-expressed from separate polymerase II (pol-II) driven plasmids (Fig. 2 A-B). Co-transfection of the four plasmids into permissive cells results in the production of infectious LCMV particles within a time frame of no more than 72 to 96 hours.

Using this technology we have also designed LCMV-based single-cycle vaccine vectors[1]: we have deleted the glycoprotein ORF in the S segment and, instead, have inserted a gene of interest e.g. a reporter gene or a vaccine antigen (Fig. 2 C-D). Such vectors are unable to express GP and need to be produced in trans-complementing GP-expressing producer cells. The resulting vector particles are infectious, they can amplify and express their genetic information in any target cell, however, they cannot form further infectious progeny particles. Such vectors are exquisitely immunogenic and therefore represent a promising new platform technology to deliver vaccines against challenging targets such as tuberculosis or HIV.

Mechanisms of antiviral antibody protection

Persistent viral infections like HIV or hepatitis C virus (HCV) represent serious global health challenges. Despite decades of intense research, preventive vaccines remain unavailable. The prototypic model of LCMV infection in mice has helped defining the key role of cytotoxic T lymphocytes (CTLs) in controlling chronic in-

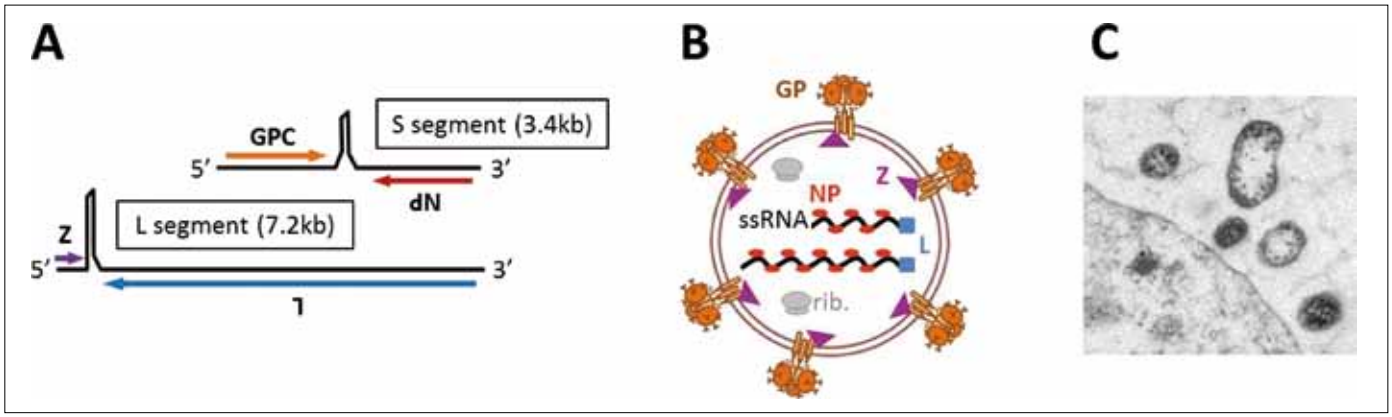

Figure 1. Genome and structure of lymphocytic choriomeningitis virus (LCMV)
A. Organization of the LCMV genome in 2 segments of negative strand RNA encoding for 4 proteins in ambisense. B. Organization of the enveloped LCMV virion. GP is the only surface determinant. C. Electron micrograph of LCMV viral particles. GP: glycoprotein, NP: nucleoprotein, Z: matrix protein, L: polymerase, rib: cellular ribosome. Panel (B) was adapted from Emonet, Virology, 2011

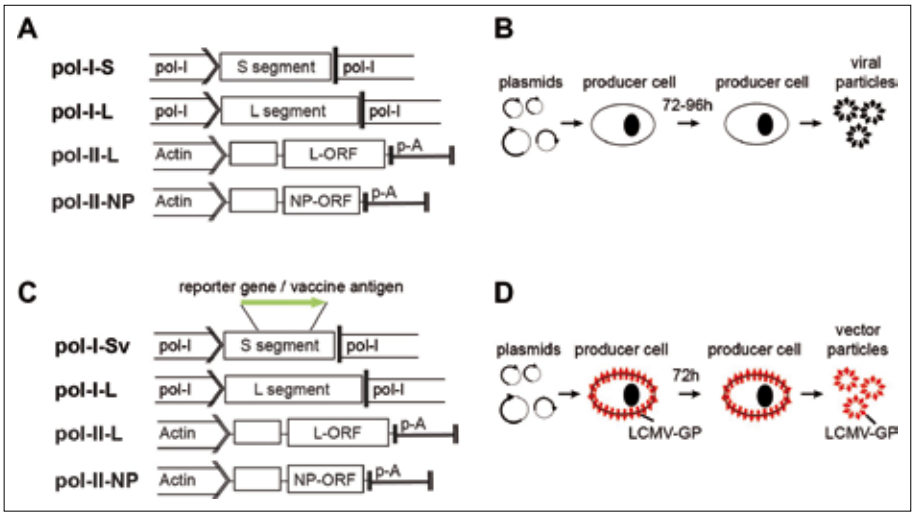

Figure 2.
LCMV reverse genetic system
A. Schematic description of the 4 plasmids used for recombinant LCMV production. Pol-I plasmids encode for entire LCMV genome segments, pol-II plasmids encode for the minimal viral trans-acting factors, namely NP and L, which are needed for viral replication and transcription. B. Infectious viral particles are obtained by co-transfection of the 4 plasmids into permissive cells. C. Replacement of the GP gene by a reporter gene in the S segment genome for recombinant LCMV vector production. D. Co-transfection of the 4 plasmids in LCMV-GP-expressing rodent cells yields infectious vector particles.

fections but has also revealed their subversion under conditions of protracted viremia[2]. CTLs peak about 8–12 days after LCMV infection, allowing the containment of the initial phase of viral replication, and are maintained for several months (Fig. 3). However, viral CTL escape mutants often arise and under circumstances of protracted infection with continuous antigen exposure, CTLs can get functionally "exhausted". Conversely, neutralizing antibodies (nAbs) appear with considerable delay, i.e. around 40 to 60 days after LCMV infection (Fig. 3), which mimics their kinetics in human infection with HIV or HCV. Irrespective of their late appearance, nAbs exhibit considerable potential in virus control, and nAbs have thus been postulated to exert long-term pressure on persistent infections. Neutralization is referred to as the inhibition of virus entry, and antiviral effect of nAbs *in vivo* were shown to synergize with the antiviral effects of concomitant T cell responses. nAbs and CTLs were thus long considered the only correlates of protection against chronic infections. The recent HIV vaccine trial RV144, however, has challenged this dogma. A 31% reduction in HIV acquisition was observed although nAbs were not elicited and no other classical correlate of protection was found. Meanwhile, evidence is increasing that non-neutralizing antibodies might have represented the correlate of protection in RV144, renewing our interest in non-neutralizing mechanisms of antiviral antibody protection. Contrary to neutralizing antibodies, non-neutralizing envelope-specific antibodies appear early on during the course of infection with LCMV in mice and HIV in humans, and several lines of evidence, from our lab and others[3], indicate that these antibodies also participate in virus control. Besides neutralization as a mechanism, antiviral antibodies can act through Fc-gamma receptors (FcγR) and complement-dependent mechanisms (Fig. 4). The individual contribution of each mechanism to *in vivo* protection remains, however, unclear. To investigate this question in the LCMV model we have developed a tool-box centered around expression cloning of LCMV-specific antibodies, in combination with genetically engineered envelope-mutant viruses. We can thereby experimentally define the extent at which neutralization, complement activation and Fc receptor binding can contribute to antiviral protection. These tools are combined with an array of gene-targeted mouse models lacking defined antibody effector mechanisms to dissect the contribution of additional pathways to protection in the mouse model. A better understanding of these yet poorly defined mechanisms underlying non-neutralizing antiviral antibody protection may benefit the refinement of strategies for vaccination and therapy in chronic viral diseases.

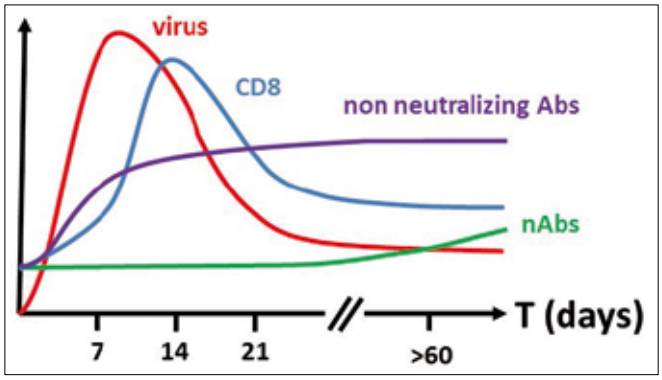

Figure 3. Kinetics of viremia, cytotoxic T cells and antibody appearance in the context of chronic infection.
CTLs: Cytotoxic T Lymphocytes, nAbs: neutralizing antibodies.

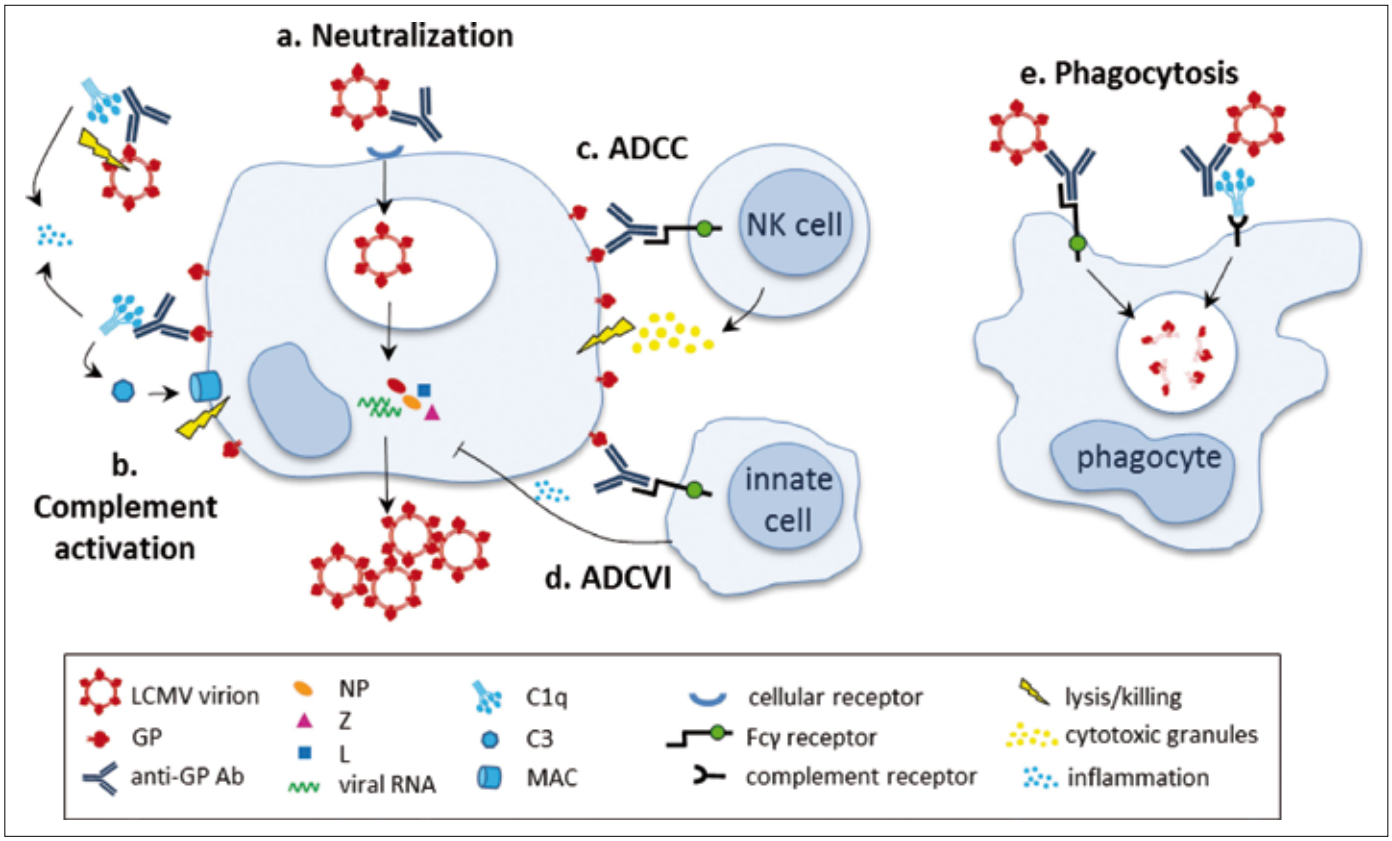

Figure 4. Antiviral effector functions of antibodies
(a) Neutralization: inhibition of virus attachment to its cellular receptor or inhibition of membrane fusion, thus prevention of viral entry. (b) Complement activation leads to lysis of virions or infected cells and enhances inflammation. C1q recognizes target bound antibody and activates the complement cascade including C3, triggering the assembly of the membrane attack complex (MAC) to lyse targets. (c) ADCC: antibody-dependent cellular cytotoxicity. Upon recognition of target-bound antibody through FcγR, NK cell kills the infected cells via secretion of cytotoxic granules. (d) ADCVI: antibody-dependent cell-mediated virus inhibition. After recognition of target bound antibody, FcγR triggers signals to inhibit virus production in the infected cell. (e) Phagocytosis of immune complexes is enhanced by both FcγR and complement receptors.

The role of alarmins in antiviral CD8 T cell immunity

It has long been known that viruses of several families have an exceptional capacity to elicit strong cytotoxic CD8+ T cell responses. Pathogen-associated molecular patterns (PAMPs) are generally accredited for these immunostimulatory properties of viral infection, but recent evidence from our lab suggests that damage-associated molecular patterns (DAMPs), also referred to as alarmins, may play an equally crucial role in this process[4]. Interleukin-33 (IL-33), an alarmin released from necrotic cells, was found to drive potent and protective CTL responses against viruses from several families (Fig. 5). Tissue damage is a common finding in disseminated viral infection, and is thought to account for alarmin release. IL-33 was found to be released from radio-resistant stromal cells rather than from immune cells, differentiating it from most classical interleukins and cytokines. Interestingly and in further contrast to PAMP effects on T cells, IL-33 acts directly on the antiviral effector T cell rather than on the antigen-presenting cell. Its receptor ST2 is expressed on activated CTLs and signals through MyD88 to drive polyfunctional effector CTL differentiation. Despite some light being shed on this novel pathway, several burning questions remain. They notably comprise the precise cellular source of biologically active IL-33 and its mechanisms of release. But also the role of IL-33 in persistent infection remains poorly defined. Chronic inflammation is a hallmark of HIV infection and is thought to erode the immune system, thereby contributing to its eventual collapse. We are therefore currently investigating the role of the alarmin IL-33 in the chronic phase of LCMV infection including its impact on T cell responses and on general immunocompetence of the persistently infected organism.

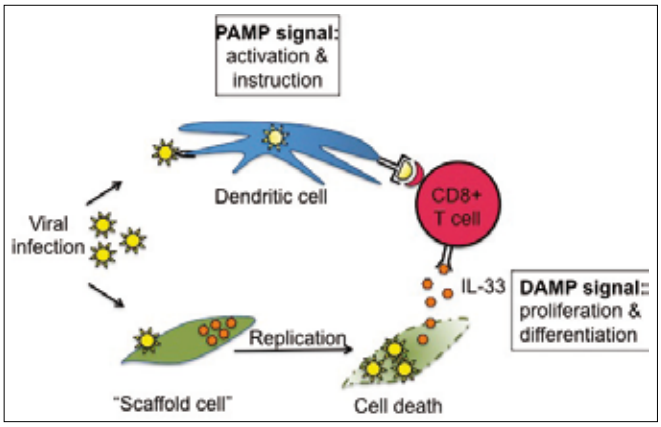

Figure 5. Schematic illustration how IL-33 and signaling through its receptor drive antiviral CD8+ T cell responses.
Viral infection results in the release of bioactive IL-33 from stromal cells. Virus-specific CD8+ T cells are activated by professional antigen presenting cells, upregulate the IL-33 receptor and sense tissue damage. This drives effector differentiation, proliferation and survival of antiviral CD8 T cells.

T cell dependence of Lassa Fever

Lassa virus (LASV) is the causative agent of Lassa fever (LF). It is endemic in West Africa (Fig. 6) where it causes an estimated 300'000 to 500'000 human infections every year, amongst which 5'000 deaths from severe hemorrhagic fever occur. In rural areas Lassa can account for 10% of febrile illnesses and seroprevalence can reach 50%. LASV is transmitted to humans from the rodent Mastomys natalensis (Fig. 6), which sheds the virus in urine and droppings. The most common LASV symptoms are non-specific and consist mainly of high fever and myalgia. In some cases however these can be accompanied by severe coughing, pharyngitis, vomiting, diarrhea, and mucosa bleeding. Lethality amongst seroconverters in the field is in the 1% range but rises to 15–20% in hospital settings. Death commonly results from hypotension, hypovolemia and hypoxia culminating in uncontrollable shock. Symptoms associated with a poor prognosis are high viremia and high serum transaminases. The only recognized treatment, the nucleoside analogue ribavirin, is of limited efficacy and vaccines remain unavailable for clinical use. The pathogenetic mechanisms operating during LF are poorly understood, and their study has long been hindered by both the lack of a suitable mouse model as well as by the need for BSL-4 containment when working with LASV. In collaboration with the high-containment laboratory in Hamburg we have developed a LF mouse model based on LASV infection of human MHC-transgenic mice and have shown that LF-like disease was T-cell dependent[5]. Meanwhile we have refined the model to investigate pathogenesis mechanisms under BSL-2 laboratory conditions using LCMV, a close relative of LASV. High-level viremia, transaminase elevation, pleural effusions, hypotension and systemic elevation of several pro-inflammatory cytokines are reminiscent of a "cytokine storm". Our working hypothesis assumes that inefficient T cell responses against the ongoing infection drive hyperactivation of virus-infected macrophages and result in a deleterious inflammatory cytokine response (Fig. 7). We currently investigate the individual contribution of a range of molecular candidates that could be responsible for severe disease. Ultimately this work should lead to novel immunomodulatory strategies for the treatment of Lassa fever.

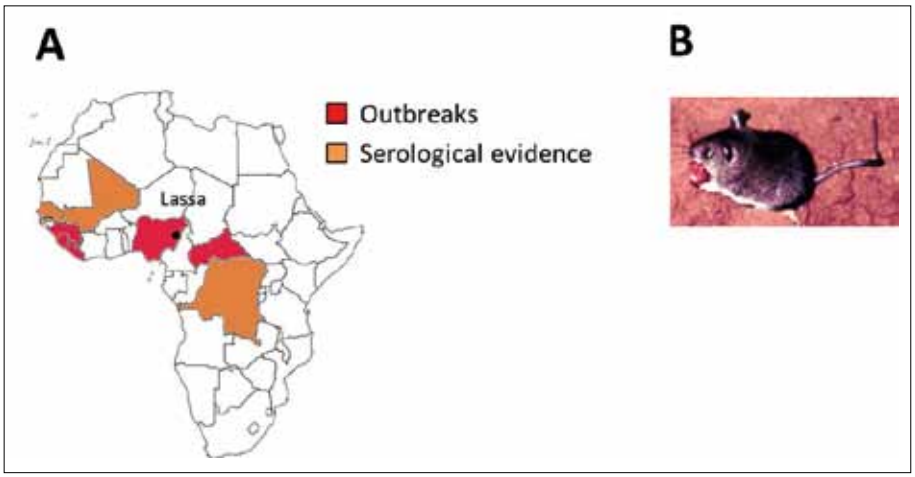

Figure 6.
Lassa fever distribution in West Africa and Lassa virus natural host
A. Distribution of Lassa fever outbreaks and serological evidence of Lassa infections in the West African human population.
B. Picture of a Mastomys natalensis rodent, natural host of Lassa virus and responsible for its transmission to humans. Picture from CDC Lassa Fever – fact sheet. 2013

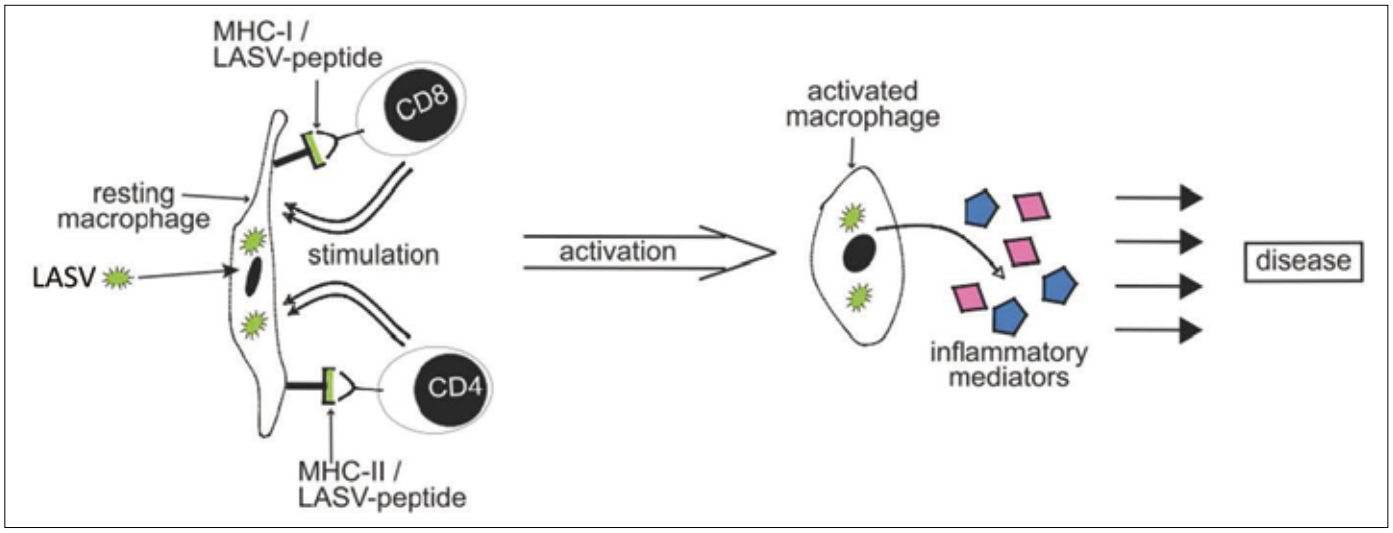

Figure 7. Postulated mechanism of LASV pathogenesis in human MHC-transgenic mice.
Inefficient T cell responses against LASV fail to eliminate infected macrophages but drive macrophage activation and secretion of inflammatory mediators, thereby leading to disease. LASV infection is not sufficient on its own to activate macrophages, thus T cells have a critical role. Schematic from Flatz et al, PLoS Pathogens, 2010[5].

Currently evolving projects

With our relocation to Basel we have also tackled some new areas of research, which are beginning to evolve at an increasing rate. One focus of our attention rests on memory B cells and their protective role in viral infection. Furthermore, we are interested in T cell-mediated virus clearance mechanisms during persistent infection, with an emphasis on the liver as a clinically relevant target organ of persistent viral diseases.

Daniel Pinschewer and team

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2. Bergthaler, A., *et al.* Viral replicative capacity is the primary determinant of lymphocytic choriomeningitis virus persistence and immunosuppression. *Proceedings of the National Academy of Sciences of the United States of America* **107**, 21641-21646 (2010).

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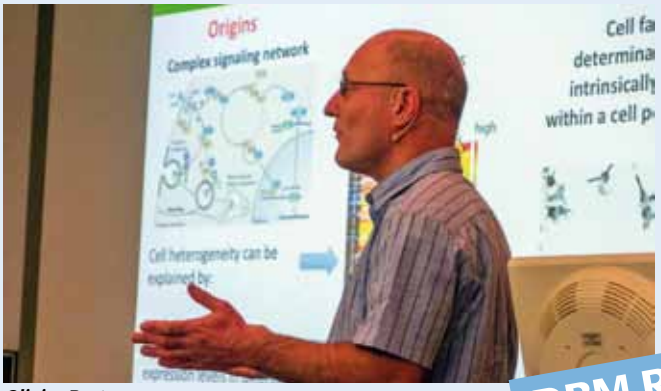
5. Flatz, L., *et al.* T cell-dependence of Lassa fever pathogenesis. *PLoS pathogens* **6**, e1000836 (2010).

DBM Research Day (January 29, 2015)



Olivier Pertz

Claudia Lengerke

Georg Holländer

Michael Roth

Gabriela Kuster Pfister

Daniela Finke

Sven Cichon

Markus Heim

Auditorium

Marten Trendelenburg

Fotos: Frank Neumann

Dissertationen

Am 19. Januar 2015 konnte **Fang Lei** von der Forschungsgruppe Ocular Pharmacology and Physiology (Departement Biomedizin Hebelstrasse) seine Dissertation mit Erfolg beenden. Er widmete sich in seiner Doktorarbeit dem Thema "Neurodegenerative stress related mitchondrial proteostasis".

Seit dem 5. März 2015 darf sich **Erez Dror** von der Forschungsgruppe Diabetes Research (Departement Biomedizin Hebelstrasse) Herr Dr. nennen. Er befasste sich in ihrer Doktorarbeit mit dem Thema: „Physiological synergy between IL-1β and insulin on glucose disposal and macrophage activity".

Auszeichnungen

Carolyn King wird SNF-Förderprofessorin

Carolyn King von der Forschungsgruppe Transplantaion Immunology and Nephrology (Departement Biomedizin Hebelstrasse) hat vom Schweizerischen Nationalfonds (SNF) eine Förderprofessur erhalten. In ihrem Projekt wird sie die Entstehung der Zellheterogenität bei CD4-positiven T-Zellen untersuchen.

Christoph Hess und Mike Recher erhalten 400'000 CHF von Gebert Rüf Stiftung

Die Gebert Rüf Stiftung unterstützt im Rahmen ihres Programms "Rare Diseases – New Approaches" ein Projekt von **Christoph Hess** von der Forschungsgruppe Immunobiology (Departement Biomedizin Hebelstrasse) und **Mike Recher** von der Forschungsgruppe Immunodeficiency (Departement Biomedizin Hebelstrasse) mit 400'000 CHF. Das Projekt untersucht die Verknüpfung von Immunabwehr und Stoffwechsel (Immunmetabolismus).

Venia docendi verliehen

In ihrer Sitzung am 10. Dezember 2014 hat die Regenz der Universität Basel **Maria Filippova** von der Forschungsgruppe Signaling (Departement Biomedizin Hebelstrasse) und **Anna Marsano** von der Forschungsgruppe Cardiac Surgery and Engineering (Departement Biomedizin Hebelstrasse) jeweils die Venia docendi für Experimentelle Medizin verliehen. **Mike Recher** von der Forschungsgruppe Immunodeficiency (Departement Biomedizin Hebelstrasse) erhielt die Venia docendi für Innere Medizin/Immunologie. In ihrer Sitzung vom 11. März 2015 hat die Regenz **Katrin Hostettler Haack** von der Forschungsgruppe Pneumology (Departement Biomedizin Hebelstrasse) die Venia docendi für Pneumologie verliehen, **Isabel Filges** von der Medizinischen Genetik erhielt die Venia docendi für Medizinische Genetik. Sie sind damit befugt, den Titel eines Privatdozenten zu führen.

Das DBM gratuliert ganz herzlich!

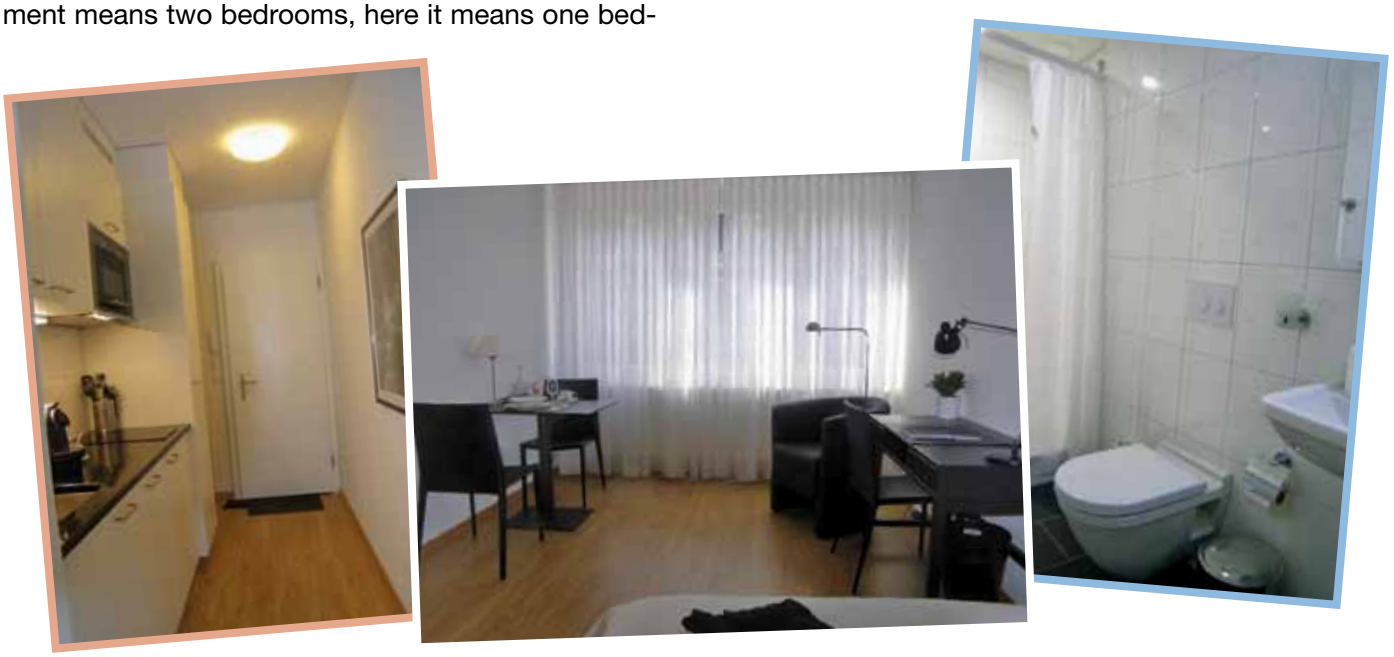
«Moving to Basel»

Moving is time consuming process and can often be a stressful period for the person(s) concerned. Moving to another country is an even more daunting experience, especially if you are organising it from a distance. To make the procedure somewhat easier, the University Hospital of Basel (UHBS) offers its new employees support in the form of the "Wohnvermittlung" – accommodation assistance.

The UHBS has a selection of furnished studios in Basel, all within walking distance of the hospital campus. We sublet these studios on a temporary basis to new employees; typically for the probationary period. This allows the employee to concentrate on their new job and use the first few months to look for, view and hopefully find their perfect apartment.
For those who want to move directly into permanent accommodation, we can provide help in looking for suitable properties, information on the residential areas in and around Basel and tips concerning what is needed and how to go about applying for a flat. We can also help you with information on subjects such as: bringing your car, residential parking permits, moving with a pet, childcare, schools etc.

Although European countries have many similarities there are still differences when looking for somewhere to live. When reading advertisements in Switzerland it is useful to know that the living room counts as a room! Whilst in other countries a 2-roomed apartment means two bedrooms, here it means one bedroom and one living room; the kitchen and bathroom are always included. In rented properties the kitchen is always installed i.e. at the very least sink, fridge, cooker and kitchen units. An added advantage is that the majority of apartment blocks provide laundry facilities for their tenants – this is a financial benefit, as the purchase of a washing machine is neither necessary nor are regular trips to a laundrette!

In other countries it is often easy to find cheap furnished flats for rent, whereas here unfurnished flats are the norm and thus furnished housing is much more expensive. However as with most things, you will find that whilst they may cost more, the Swiss standard is in a league of its own! A furnished flat in Basel is not simply an apartment with a few pieces of furniture but is normally fully equipped with the latest mod cons, crockery and cooking utensils in the kitchen - often even including the iconic Nespresso machine! In addition the flat will usually be cleaned once a week and the bed linen and towels changed on a regular basis.



It is important to note that the cost of living in Basel is higher than in many other European cities and thus a realistic budget is necessary in order to be successful with your search. Perhaps a word of warning; online adverts for extremely cheap accommodation should be approached with caution. Unless a reputable management company is offering the apartment, do not transfer rent in advance without either having either seen the property or confirming the identity of the contracting party.

Basel is a great place to live – there are many cultural events, such as the Basler Fasnacht (Carnival), music festivals and sporting events throughout the year. Due to its borders with France and Germany it is also an international city and a great base for touring on your days off. If you would like to read more about life in Basel and its surrounding area, we recommend the following English brochure from the Department of External Affairs and Marketing Basel Stadt: http://www.bs.ch/dms/bs/download/portrait-de/einleitung-weltstadt/Brochure_Welcome_BaselStadt.pdf.

Whatever your requirements, the "Wohnvermittlung" will strive to help you find accommodation within your budget.

For more information please contact:
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Genome Research | GENOME RESEARCH | 2014 Dec,24(12):1918–31 | IF 13,852

Population and single-cell genomics reveal the *Aire* dependency, relief from Polycomb silencing, and distribution of self-antigen expression in thymic epithelia

Stephen N. Sansom[1,*], Noriko Shikama-Dorn[2,*], Saule Zhanybekova[2], Gretel Nusspaumer[2], Iain C. Macaulay[3], Mary E. Deadman[4], Andreas Heger[1], Chris P. Ponting[1,3], and Georg A. Holländer[2,4]

Promiscuous gene expression (PGE) by thymic epithelial cells (TEC) is essential for generating a diverse T cell antigen receptor repertoire tolerant to self-antigens, and thus for avoiding autoimmunity. Nevertheless, the extent and nature of this unusual expression program within TEC populations and single cells are unknown. Using deep transcriptome sequencing of carefully identified mouse TEC subpopulations, we discovered a program of PGE that is common between medullary (m) and cortical TEC, further elaborated in mTEC, and completed in mature mTEC expressing the autoimmune regulator gene *(Aire)*. TEC populations are capable of expressing up to 19,293 protein-coding genes, the highest number of genes known to be expressed in any cell type. Remarkably, in mouse mTEC, *Aire* expression alone positively regulates 3980 tissue-restricted genes. Notably, the tissue specificities of these genes include known targets of autoimmunity in human *AIRE* deficiency. Led by the observation that genes induced by *Aire* expression are generally characterized by a repressive chromatin state in somatic tissues, we found these genes to be strongly associated with H3K27me3 marks in mTEC. Our findings are consistent with AIRE targeting and inducing the promiscuous expression of genes previously epigenetically silenced by Polycomb group proteins. Comparison of the transcriptomes of 174 single mTEC indicates that genes induced by *Aire* expression are transcribed stochastically at low cell frequency. Furthermore, when present, Aire expression-dependent transcript levels were 16-fold higher, on average, in individual TEC than in the mTEC population.

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Reduced IFNλ4 activity is associated with improved HCV clearance and reduced expression of interferon-stimulated genes

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Hepatitis C virus (HCV) infections are the major cause of chronic liver disease, cirrhosis and hepatocellular carcinoma worldwide. Both spontaneous and treatment-induced clearance of HCV depend on genetic variation within the interferon-lambda locus, but until now no clear causal relationship has been established. Here we demonstrate that an amino-acid substitution in the IFNλ4 protein changing a proline at position 70 to a serine (P70S) substantially alters its antiviral activity. Patients harbouring the impaired IFNλ4-S70 variant display lower interferon-stimulated gene (ISG) expression levels, better treatment response rates and better spontaneous clearance rates, compared with patients coding for the fully active IFNλ4-P70 variant. Altogether, these data provide evidence supporting a role for the active IFNλ4 protein as the driver of high hepatic ISG expression as well as the cause of poor HCV clearance.

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Osteoinductivity of engineered cartilaginous templates devitalized by inducible apoptosis

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The role of cell-free extracellular matrix (ECM) in triggering tissue and organ regeneration has gained increased recognition, yet current approaches are predominantly based on the use of ECM from fully developed native tissues at nonhomologous sites. We describe a strategy to generate customized ECM, designed to activate endogenous regenerative programs by recapitulating tissue-specific developmental processes. The paradigm was exemplified in the context of the skeletal system by testing the osteoinductive capacity of engineered and devitalized hypertrophic cartilage, which is the primordial template for the development of most bones. ECM was engineered by inducing chondrogenesis of human mesenchymal stromal cells and devitalized by the implementation of a death-inducible genetic device, leading to cell apoptosis on activation and matrix protein preservation. The resulting hypertrophic cartilage ECM, tested in a stringent ectopic implantation model, efficiently remodeled to form de novo bone tissue of host origin, including mature vasculature and a hematopoietic compartment. Importantly, cartilage ECM could not generate frank bone tissue if devitalized by standard "freeze & thaw" (F&T) cycles, associated with a significant loss of glycosaminoglycans, mineral content, and ECM-bound cytokines critically involved in inflammatory, vascularization, and remodeling processes. These results support the utility of engineered ECM-based devices as off-the-shelf regenerative niches capable of recruiting and instructing resident cells toward the formation of a specific tissue.

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IL-28B is a Key Regulator of B- and T-Cell Vaccine Responses against Influenza

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Abstract

Influenza is a major cause of morbidity and mortality in immunosuppressed persons, and vaccination often confers insufficient protection. IL-28B, a member of the interferon (IFN)-λ family, has variable expression due to single nucleotide polymorphisms (SNPs). While type-I IFNs are well known to modulate adaptive immunity, the impact of IL-28B on B-and T-cell vaccine responses is unclear. Here we demonstrate that the presence of the IL-28B TG/GG genotype (rs8099917, minorallele) was associated with increased seroconversion following influenza vaccination (OR 1.99 p = 0.038). Also, influenza A (H1N1)-stimulated T-and B-cells from minor-allele carriers showed increased IL-4 production (4-fold) and HLA-DR expression, respectively. *In vitro*, recombinant IL-28B increased Th1-cytokines (e.g. IFN-γ), and suppressed Th2-cytokines (e.g. IL-4, IL-5, and IL-13), H1N1-stimulated B-cell proliferation (reduced 70%), and IgG-production (reduced.70%). Since IL-28B inhibited B-cell responses, we designed antagonistic peptides to block the IL-28 receptor α-subunit (IL-28RA). In vitro, these peptides significantly suppressed binding of IFN-λs to IL28RA, increased H1N1-stimulated B-cell activation and IgG-production in samples from healthy volunteers (2-fold) and from transplant patients previously unresponsive to vaccination (1.4-fold). Together, these findings identify IL-28B as a key regulator of the Th1/Th2 balance during influenza vaccination. Blockade of IL28RA offers a novel strategy to augment vaccine responses.

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A Case of Primary JC Polyomavirus Infection–Associated Nephropathy

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A 15-year-old boy with a posterior urethral valve received a deceased donor kidney transplant (KT) in March 2011. Basiliximab induction followed by tacrolimus-based triple medication was used as immunosuppression. Eleven months after KT, the graft function deteriorated and the biopsy demonstrated interstitial nephritis suggestive of acute rejection. BK polyomavirus (BKPyV) surveillance in urine and plasma was negative. The patient received methylprednisolone pulses and anti-thymocyte globulin. Immunohistochemistry was positive for simian virus 40 (SV40) large T-antigen (LTag) in the biopsies, and quantitative polymerase chain reaction for JC polyomavirus(JCPyV) indicated high viral loads in urine and borderline levels in plasma. Immunosuppression was reduced and follow-up biopsies showed tubular atrophy and interstitial fibrosis. Two years after KT, antibody-mediated rejection resulted in graft loss and return to hemodialysis. Retrospective serologic work-up indicated a primary JCPyV infection with seroconversion first for IgM, followed by IgG, but no indication of BKPyV infection. In the SV40 LTag positive biopsies, JCPyV deoxyribonucleic acid (DNA) with archetype noncoding control region was detected, while BKPyV DNA was undetectable. To the best of our knowledge, this is the first reported case of primary JCPyV infection as the cause of PyV-associated nephropathy in KT.

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Detection of nickel and palladium contact hypersensitivity by a flow cytometric lymphocyte proliferation test

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Abstract
We established a flow cytometric lymphocyte proliferation test (LPT) for the detection of nickel (Ni) andpalladium (Pd) sensitization. Eighty-one consecutive patients with an indication for patch test (PT) were tested by LPT with Ni ($NiSO_4$) and Pd (Na_2PdCl4 and $PdCl_2$) salts. The imprecision of the LPT was low (coefficient of variation 7.2%). Using PT as a diagnostic reference, the sensitivity and specificity of LPT were 74.4% and 80% for $NiSO_4$, 74.4% and 78.3% for Na_2PdCl_4, and 57.2% and 85.4% for $PdCl_2$, respectively. For both Ni and Pd, the likelihood ratio for a positive PT markedly increased with increasing LPT value. With medical history as a reference, the sensitivity and specificity were 40.6% and 82.1% for LPT and 59.4% and 89.7% for PT, respectively. Combination of LPT and PT resulted in a higher specificity of 95%, albeit lower sensitivity of 34.4%. In conclusion, flow cytometric LPT represents a reliable and useful method for the detection of Ni and Pd sensitization. LPT values correlate with PT results and, when used in combination with PT, increase test specificity.

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EGFR and IGF-1R in regulation of prostate cancer cell phenotype and polarity: opposing functions and modulation by T-cadherin

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Abstract

T-cadherin is an atypical glycosylphosphatidylinsoitol-anchored member of the cadherin superfamily of adhesion molecules. We found that T-cadherin overexpression in malignant (DU145) and benign (BPH-1) prostatic epithelial cell lines or silencing in the BPH-1 cell line, respectively, promoted or inhibited migration and spheroid invasion in collagen I gel and Matrigel. T-cadherin–dependent effects were associated with changes in cell phenotype: overexpression caused cell dissemination and loss of polarity evaluated by relative positioning of the Golgi/nuclei in cell groups, whereas silencing caused formation of compact polarized epithelial-like clusters. Epidermal growth factor receptor (EGFR) and IGF factor-1 receptor (IGF-1R) were identified as mediators of T-cadherin effects. These receptors per se had opposing influences on cell phenotype. EGFR activation with EGF or IGF-1R inhibition with NVP-AEW541 promoted dissemination, invasion, and polarity loss. Conversely, inhibition of EGFR with gefitinib or activation of IGF-1R with IGF-1 rescued epithelial morphology and decreased invasion. T-cadherin silencing enhanced both EGFR and IGF-1R phosphorylation, yet converted cells to the morphology typical for activated IGF-1R. T-cadherin effects were sensitive to modulation of EGFR or IGF-1R activity, suggesting direct involvement of both receptors. We conclude that T-cadherin regulates prostate cancer cell behavior by tuning the balance in EGFR/IGF-1R activity and enhancing the impact of IGF-1R.

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Effects of methylphenidate and MDMA on appraisal of erotic stimuli and intimate relationships

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Abstract

Methylphenidate mainly enhances dopamine neurotransmission whereas 3,4-methylenediox-ymethamphetamine (MDMA, "ecstasy") mainly enhances serotonin neurotransmission. However, both drugs also induce a weaker increase of cerebral noradrenaline exerting sympathomimetic properties. Dopaminergic psychostimulants are reported to increase sexual drive, while serotonergic drugs typically impair sexual arousal and functions. Additionally, serotonin has also been shown to modulate cognitive perception of romantic relationships. Whether methylphenidate or MDMA alter sexual arousal or cognitive appraisal of intimate relationships is not known. Thus, we evaluated effects of methylphenidate (40 mg) and MDMA (75 mg) on subjective sexual arousal by viewing erotic pictures and on perception of romantic relationships of unknown couples in a double-blind, randomized, placebo-controlled, crossover study in 30 healthy adults. Methylphenidate, but not MDMA, increased ratings of sexual arousal for explicit sexual stimuli. The participants also sought to increase the presentation time of implicit sexual stimuli by button press after methylphenidate treatment compared with placebo. Plasma levels of testosterone, estrogen, and progesterone were not associated with sexual arousal ratings. Neither MDMA nor methylphenidate altered appraisal of romantic relationships of others.

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Protective Efficacy of Individual CD8$^+$ T Cell Specificities in Chronic Viral Infection

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Specific CD8$^+$ T cells (CTLs) play an important role in resolving protracted infection with hepatitis B and C virus in humans and lymphocytic choriomeningitis virus (LCMV) in mice. The contribution of individual CTL specificities to chronic virus control, as well as epitope-specific patterns in timing and persistence of antiviral selection pressure, remain, however, incompletely defined. To monitor and characterize the antiviral efficacy of individual CTL specificities throughout the course of chronic infection, we coinoculated mice with a mixture of wild-type LCMV and genetically engineered CTL epitope-deficient mutant virus. A quantitative longitudinal assessment of viral competition revealed that mice continuously exerted CTL selection pressure on the persisting virus population. The timing of selection pressure characterized individual epitope specificities, and its magnitude varied considerably between individual mice. This longitudinal assessment of "antiviral efficacy" provides a novel parameter to characterize CTL responses in chronic viral infection. It demonstrates remarkable perseverance of all antiviral CTL specificities studied, thus raising hope for therapeutic vaccination in the treatment of persistent viral diseases.

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Acute Effects of 3,4-Methylenedioxymethamphetamine and Methylphenidate on Circulating Steroid Levels in Healthy Subjects

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Abstract

3,4-Methylenedioxymethamphetamine (MDMA, 'ecstasy') and methylphenidate are widely used psychoactive substances.MDMA primarily enhances serotonergic neurotransmission,and methylphenidate increases dopamine but has no serotonergic effects. Both drugs also increase norepinephrine, resulting in sympathomimetic properties. Here we studied the effects of MDMA and methylphenidate on 24-hour plasma steroid profiles. 16 healthy subjects (8 men, 8 women) were treated with single doses of MDMA (125 mg), methylphenidate (60 mg), MDMA + methylphenidate, and placebo on 4 separate days using a cross-over study design. Cortisol, cortisone, corticosterone, 11-dehydrocorticosterone, aldosterone, 11-deoxycorticosterone, dehydroepiandrosterone (DHEA), dehydroepiandrosterone sulfate (DHEAS), androstenedione, and testosterone were repeatedly measured up to 24 h using liquid chromatography-tandem mass spectroscopy. MDMA significantly increased the plasma concentrations of cortisol, corticosterone, 11-dehydrocorticosterone, and 11-deoxycorticosterone and also tended to moderately increase aldosterone levels compared with placebo. MDMA also increased the sum of cortisol + cortisone and the cortisol/cortisone ratio, consistent with an increase in glucocorticoid production. MDMA did not alter the levels of cortisone, DHEA, DHEAS, androstenedione, or testosterone. Methylphenidate did not affect any of the steroid concentrations, and it did not change the effects of MDMA on circulating steroids. In summary, the serotonin releaser MDMA has acute effects on circulating steroids. These effects are not observed after stimulation of the dopamine and norepinephrine systems with methylphenidate. The present findings support the view that serotonin rather than dopamine and norepinephrine mediates the acute pharmacologically induced stimulation of the hypothalamic-pituitary-adrenal axis in the absence of other stressors.

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Supralinear dendritic Ca^{2+} signalling in young developing CA1 pyramidal cells

Jörg Pohle[1,2] and Josef Bischofberger[1]

Abstract

Although Ca^{2+} is critically important in activity-dependent neuronal development, not much is known about the regulation of dendritic Ca^{2+} signals in developing neurons. Here, we used ratiometric Ca^{2+} imaging to investigate dendritic Ca^{2+} signalling in rat hippocampal pyramidal cells during the first 1–4 weeks of postnatal development. We show that active dendritic backpropagation of Nav channel-dependent action potentials (APs) evoked already large dendritic Ca^{2+} transients in animals aged 1 week with amplitudes of ~150 nM,similar to the amplitudes of 160 nM seen in animals aged 4 weeks. Although the AP-evoked dendritic Ca^{2+} load increased about four times during the first 4 weeks, the peak amplitude of free Ca^{2+} concentration was balanced by a four-fold increase in Ca^{2+} buffer capacity κ_s(~70 vs. 280). Furthermore, Ca^{2+} extrusion rates increased with postnatal development, leading to a slower decay time course (~0.2 s vs. ~0.1 s) and more effective temporal summation of Ca^{2+} signals in young cells. Most importantly, during prolonged theta-burst stimulation dendritic Ca^{2+} signals were up to three times larger in cells at 1 week than at 4 weeks of age and much larger than predicted by linear summation, which is attributable to an activity-dependent slow-down of Ca^{2+} extrusion. As Ca^{2+} influx is four-fold smaller in young cells, the larger Ca^{2+} signals are generated using four times less ATP consumption.Taken together,the data suggest that active backpropagations regulatedendritic Ca^{2+} signals during early postnatal development. Remarkably, during prolonged AP firing, Ca^{2+} signals are several times larger in young than in mature cells as a result of activity-dependent regulation of Ca^{2+} extrusion rates.

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A Diagnostic HIV-1 Tropism System Based on Sequence Relatedness

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Key clinical studies for HIV coreceptor antagonists have used the phenotyping-based Trofile test. Meanwhile various simpler-to-do genotypic tests have become available that are compatible with standard laboratory equipment and Web-based interpretation tools. However, these systems typically analyze only the most prominent virus sequence in a specimen. We present a new diagnostic HIV tropism test not needing DNA sequencing. The system, XTrack, uses physical properties of DNA duplexes after hybridization of single-stranded HIV-1 *env* V3 loop probes to the clinical specimen. Resulting "heteroduplexes" possess unique properties driven by sequence relatedness to the reference and resulting in a discrete electrophoretic mobility. A detailed optimization process identified diagnostic probe candidates relating best to a large number of HIV-1 sequences with known tropism. From over 500 V3 sequences representing all main HIV-1 subtypes (Los Alamos database), we obtained a small set of probes to determine the tropism in clinical samples. We found a high concordance with the commercial TrofileES test (84.9%) and the Web-based tool Geno2Pheno (83.0%). Moreover, the new system reveals mixed virus populations, and it was successful on specimens with low virus loads or on provirus from leukocytes. A replicative phenotyping system was used for validation. Our data show that the XTrack test is favorably suitable for routine diagnostics. It detects and dissects mixed virus populations and viral minorities; samples with viral loads (VL) of <200 copies/ml are successfully analyzed. We further expect that the principles of the platform can be adapted also to other sequence-divergent pathogens, such as hepatitis B and C viruses.

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REVIEWS

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A role for interleukin-22 in the alleviation of metabolic syndrome

Elise Dalmas & Marc Y Donath

Increasing evidence points to a role for the immune system in the regulation of metabolism. Two new studies in mice indicate treatment with interleukin-22 restores mucosal immunity in diabetes and alleviates metabolic disease, resulting in improved glycemic control.

Body weight gain impairs the individual's response to insulin and results in reduced glucose uptake, termed insulin resistance. Increased production of insulin from pancreatic beta cells is then required to maintain normal blood glucose levels. Eventually, insulin secretion no longer compensates for the increased insulin demand, resulting in hyperglycemia and type 2 diabetes. Multiple interconnected mechanisms underlie insulin resistance and defective islet beta cell secretory function including glucotoxicity, lipotoxicity, oxidative stress, endoplasmic reticulum (ER) stress, alterations of the gut microbiota and the formation of amyloid deposits in the islets. All of these stressors may induce an inflammatory response1 and, accordingly, anti-inflammatory drugs are in development for the treatment of patients with type 2 diabetes[1].

In this issue of *Nature Medicine*[2], and in a recent publication in *Nature*[3], two complementary studies describe new roles for interleukin-22 (IL-22) in regulating metabolic homeostasis. IL-22 is part of the IL-10 cytokine family and is predominantly expressed by innate lymphoid cells and activated $CD4^+$ T helper subsets such as T helper type 17 (T_H17) and T_H22 cells. Wang *et al.*[3] describe the role of IL-22 in the preservation of the gut mucosal barrier and prevention of endotoxemia and chronic inflammation in obese mice. Furthermore, they show IL-22 improves insulin sensitivity and lipid metabolism in different mouse models of diabetes. Hasnain *et al.*[2] show in mouse and in human islets that both endogenous and exogenous IL-22 protects the insulin-producing beta cells from oxidative and ER stress and that IL-22 improves maintenance of blood glucose levels in diet-induced obese (DIO) mice. The role of IL-22 in the regulation of metabolism opens new avenues for potential treatment of metabolic diseases and highlights the bridge between metabolism and immunity.

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Above you can find the abstracts of recent articles published by members of the DBM. The abstracts are grouped according to the impact factor of the journal where the work appeared. To be included, the papers must meet the following criteria:

1. The first author, last author or corresponding author (at least one of them) is a member of the DBM.
2. Department of Biomedicine and University of Basel affiliation must be mentioned in authors list as published by the journal.
3. The final version of the article must be available (online pre-publications will be included when the correct volume, page numbers etc. becomes available).

We are focussing on original publications. Due to page constraints, abstracts of publications that appeared in lower ranked journals may not be able to be included. Review articles are generally not considered, unless they appeared in the very top journals (e.g. Cell, Science, Nature, NEJM, etc.). The final decision concerning inclusion of an abstract will be made by the chair of the Department of Biomedicine.

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Feiner Hefezopf

Zutaten:
1 kg 405er Weizenmehl; 500 ml Milch, lauwarme; 100 g Zucker; 42 g Hefe, (1 Würfel); 150 g Butter, weiche; 2 TL Salz; 2 Eier; 1 EL Zitronenschale, gerieben oder 5 Tropfen Bittermandelaroma; 1 Ei, zum Bestreichen; 2 EL Zucker (Hagelzucker)

Zubereitung:
Arbeitszeit: ca. 30 Min.
Ruhezeit: ca. 2 Std. / Schwierigkeitsgrad: normal

Für einen Zopf von 500 g einfach die Mengenangaben halbieren.

Mehl in eine grosse Schüssel sieben. Milch leicht erwärmen und in einen Rührbecher giessen. Zucker und zerbröckelte Hefe dazu und alles zusammen so gut verrühren bis sich die Hefe weitgehend aufgelöst hat. Zitronenschale, oder Bittermandelöl, und Eier dazugeben und alles zusammen gut verquirlen. Am besten kurz mit einem Zauberstab, ansonsten mit dem Handmixer.

Diese Flüssigkeit in einem Schwung zum Mehl giessen, weiche Butter und Salz dazu und sofort alles zusammen kräftig verkneten.

Ein Vorteig ist nicht notwendig und auch nicht wünschenswert. So lange kneten, bis der Teig elastisch und glatt ist. Von Hand etwa 10 Min., mit der Küchenmaschine entsprechend weniger. Wer möchte, kann natürlich noch Rosinen dazugeben. Mit einem feuchten Küchentuch (damit der Teig oben nicht antrocknet) abdecken und um das Doppelte aufgehen lassen (kann 2 Stunden dauern).

Eine Backunterlage mit Mehl bestreuen und den gegangenen Hefeteig darauf geben und diesen von Hand nochmals durchkneten.

Den Zopf aus drei Strängen flechten.

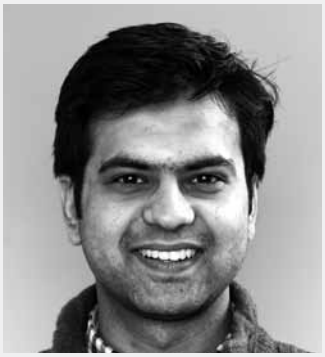
Den Zopf diagonal auf das gefettete, oder mit Backpapier ausgelegte Backblech legen. Nun ein ganzes Ei sehr gut verquirlen, am besten mit Hilfe des Mixers, und eine Prise Zucker und Salz zugeben. Das ist sehr wichtig, weil der mit Ei bestrichene Zopf dann nicht schwarz wird beim Backen. Nach Wunsch schön dick mit Hagelzucker bestreuen.

Jetzt sollte er nochmals 30 Min. gehen. Zwischenzeitlich den Backofen auf 200° vorheizen. Manche empfehlen Ober- und Unterhitze, da der Zopf bei Heissluft schneller trocken werden kann, weil er zu schnell aufgeht und dadurch zu viel Luft in den Teig kommt.

Auf die mittlere Schiene des Ofens schieben und etwa 45 Minuten backen. Je nach Backofen kann man nach der Hälfte der Backzeit auf 180° herunterschalten. Bei Heissluft entsprechend weniger.

DEPARTEMENT BIOMEDIZIN HEBELSTRASSE

Salvatore Calogero
Experimental Immunology



Mayank Chauhan
Rheumatology

Marianne Dölz
Molecular Immune Regulation

Julien Guerrero
Tissue Engineering

Danny Labes
FACS Core Facility

Sandro Nuciforo
Hepatology

Amanda Ochoa-Espinosa
Cardiovascular Molecular Imaging

DEPARTEMENT BIOMEDIZIN MATTENSTRASSE

Barbara Widmer
Developmental Genetics

DEPARTEMENT BIOMEDIZIN PETERSPLATZ

Klaudia Bagienski
Abteilung Infektions-diagnostik

Karen Cornille
Experimental Virology

DEPARTEMENT BIOMEDIZIN KLINGELBERG-STRASSE

Tania Rinaldi Barkat
Brain and Sound

Lionel Tintignac
Neuromuscular Research

Ausserdem haben angefangen:

DEPARTEMENT BIOMEDIZIN HEBELSTRASSE

David Blattner
Oncology Surgery
Leonore Branco
Clinical Immunology
Claudia Cavelti-Weder
Diabetes Research
Celine Freymond
Molecular Nephrology
Morgane Hilpert
Experimental Hematology
Thibaut Klein
Tissue Engineering
Laurent Muller
Inner Ear Research
Myroslava Mytsyk
Cardiac Surgery and Engineering
Amir Steinitz
Tissue Engineering
Fabrizio Vinzens
Oncology Surgery
Gongda Xue
Cancer Immunology

DEPARTEMENT BIOMEDIZIN MATTENSTRASSE

Laura Cavalleri
Embryology and Stem Cell Biology
Amita Singh
Molecular Genetics

DEPARTEMENT BIOMEDIZIN PETERSPLATZ

Yusuf Ertuna
Experimental Virology
Christof Schneider
Abteilung für Infektionsdiagnostik
Elif Türegün
Abteilung für Infektionsdiagnostik
Sabrina Wilk
Transplantation Virology

Danny Labes wird neuer Leiter der FACS Core Facility am DBM Hebelstrasse

Danny ist gelernter Biologielaborant und hat seine Ausbildung am Friedrich Loeffler-Institut auf der Insel Riems in der Nähe von Greifswald (D) absolviert. Von der Ostsee ist er 2008 an den Genfer See gezogen und hat eine Stelle am Ludwig Institute for Cancer Reserach in Lausanne angetreten, um sein Leben ganz der Flowzytometrie zu widmen. Währenddessen hat er angefangen, berufsbegleitend Naturwissenschaften zu studieren, der Masterabschluss ist bald erreicht. Danny ist „certified cytometrist", geht in seiner Freizeit, wenn es das Studium erlaubt, gern ins Fitnessstudio und interessiert sich für alles, was mit Elektronik zu tun hat. Einen guten Start und viel Freude und Erfolg am DBM, Danny!

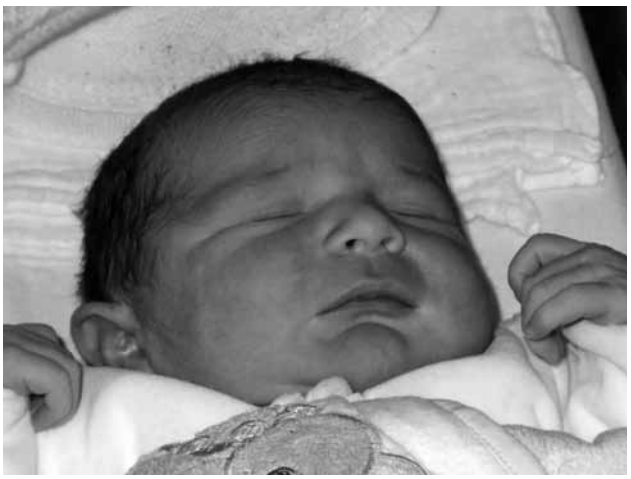
Congratulations

Das DBM gratuliert ganz herzlich!

Elisa Sievers-Stober
geboren am 20.01.2015

Milan Sztretye
geboren am 08.01.2015

Herzlich willkommen, allerseits!



Lévi Demougin
geboren am 24.11.2014

Staff are happy with the Department of Biomedicine

According to a staff survey carried out in autumn of last year the Department of Biomedicine has the highest level of staff satisfaction at the University Hospital of Basel. In comparison with other departments at the USB the DBM was ranked in first place. Satisfaction was measured according to a dissatisfaction index against which the values for individual topics were scored. Satisfaction with work content was top of the list with only 18.2% dissatisfaction (i.e. 87.8% satisfaction). Work content was seen as interesting and diverse and met with the expectations of the staff.

The work team ranked second, with only 23.4% of the staff dissatisfied (i.e. 76.6% satisfied). The working environment was well regarded, social contact was valued and help was available in stressful situations.

24.9% were dissatisfied with management (i.e. 75.1% satisfied), which is also a good ranking. Professional competence, trust in managers, open communication, the manner in which problems were dealt with, and the possibility to work independently and take part in decision making were all much valued by many of the staff.

28.6% (71.4% satisfied) were dissatisfied with the services provided by their employers. The quality of the personnel restaurants, the opening hours of the canteen, access via public transport, were all viewed favourably by staff, childcare and availability of parking spaces are problem areas that are known throughout the USB and that were also viewed negatively in the survey.

Financial compensation met with 37.9% dissatisfaction (63.2% satisfied); social contributions in combination with salaries were particularly well ranked.

37.9% were not satisfied with the amount of time they had to work (62.1% satisfied) although the working hours themselves were well ranked. Staff who were not satisfied wished for more paid holidays or for more possibilities to take unpaid leave.

Pressure for workspace was the main reason that 38% were dissatisfied (62% satisfied) with their physical workplace. This is another known problem. Interdisciplinary cooperation gets a red-light with 40.9% dissatisfied (59.1% satisfied), those who were dissatisfied wish for more interdepartmental communication and recognition. Training and further education received the lowest ranking at 41.2% (58.8% satisfaction). The main factor here was access to further education.
We are working on these issues and let you know from time to time which steps are planned in the near future.

Overall, therefore, the DBM averaged 22.3%. i.e. 77.7% satisfaction.

What does this mean for the future? We shall move forward but we shall not rest. We can all make improvements. We must all remember that we can all contribute to our satisfaction with our workplace. We embrace the DBM-culture in which we all feel very good!

Heidi Hoyermann

Frühlings- und Osterliteratur für Klein und Gross

Barbara Constantine: Und dann kam Paulette

«Ferdinand ist Witwer, Grossvater, guter Freund … aber leider allein auf seinem grossen Bauernhof. Als er nach einem Unwetter seiner Nachbarin hilft, finden die Enkelsöhne, er müsse die ältere Dame bei sich aufnehmen. Zu Marceline kommen noch Simone und Hortense, Guy und Kim … und alle werden sie eine wunderbare Wohngemeinschaft, frei nach dem Motto: Zusammen ist man weniger allein …»

Ein feiner, fröhlicher Roman mit viel Gefühl, guter Beobachtungsgabe und mit leichter Hand geschrieben – französisch, charmant und lebensnah.

Eva Maaser: «Eine Gurke macht noch keinen Frühling»

Selbstverständlich spräche einiges dafür, den Fund einer Leiche im Gurkenbeet des gerade geerbten Anwesens unverzüglich der Polizei zu melden. Was also hält Carlotta davon ab? Nun, zunächst ein verirrtes Schaf, gefolgt von Nachbarin Edith in ihrer schrillen Kittelschürze. Dann wären da ein Baron samt vierschrötigem Hund und die überraschende und keinesfalls willkommene Stippvisite dreier Freunde. Eva Maaser erzählt in mühelosem Tonfall, selbstironisch aus der Ich-Perspektive: Ein geheimnisvolles Erbe, verzwickte Familienverhältnisse und ein Dorf in heller Aufregung. Dabei schlüpft man in die kleine Welt um die beiden Hauptfiguren. In diesem Kosmos entwickelt sich ein Soft-Krimi in feinster Agatha-Christie-Manier. Spannender kann der Frühling nicht werden!

Gertrud Leutenegger: Panischer Frühling – Roman

Ein Vulkanausbruch auf Island legt den europäischen Luftverkehr lahm, Zehntausende Menschen stranden an den Flughäfen. Während die Bilder der Aschewolke um die Welt gehen, steht über der Themse ein strahlend blauer Frühlingshimmel. Die Stadt wirkt wie abgeschnitten vom Rest der Welt. Auf der London Bridge begegnet die Erzählerin einem jungen Mann mit einem Feuermal im Gesicht. Jonathan verkauft die Obdachlosenzeitung. Er ist von der Südküste hierher geflüchtet, wo das Meer sich nimmt, was ihm nicht zusteht. Die beiden sind einander eigenartig vertraut. Sie teilen Verletzungen – den frühen Verlust des Vaters – und Hoffnungen, und allmählich, mit jedem Treffen ein wenig mehr, gehen die vergessenen Geheimnisse des einen in den anderen über. Dann aber verschwindet Jonathan ebenso plötzlich, wie sie einander begegnet sind, die Flugzeuge kehren zurück. Als der Frühling sich seinem Ende nähert, macht die Erzählerin sich auf die Suche, nach Jonathan, nach sich selbst.

Ein zutiefst bewegender Roman über die eruptive Kraft der Erinnerung, die Suche nach der verlorenen Zeit. Über das Wiederfinden der eigenen Geschichte in einem anderen Menschen.

Jonas Lüscher: Frühling der Barbaren

Zwei Patienten schlendern durch den Garten einer psychiatrischen Anstalt. Der eine erzählt dem anderen, was er in einem tunesischen Luxusresort erlebt haben will. Dort feierte ein englisches Paar mit 70 Yuppie-Gästen Hochzeit. Am näch-

sten Morgen kam es zum Crash des britischen Finanzsystems, und sie konnten ihre Rechnung nicht mehr bezahlen. Als sie deshalb nicht mehr bedient wurden, brachen sie als Erstes einen Getränkekühlschrank auf …

Rotraut Susanne Berner: Frühlings-Wimmelbuch (Midi-Ausgabe)

Wer mit Rotraut Susanne Berners bekannten Wimmelbüchern auf Reisen gehen will, braucht eine grosse Handtasche und genügend Platz im Zug. Denn diese Bücher sind ganz schön gross. Weil es aber gerade auf Reisen Spass macht, sich die Zeit mit dem Entdecken immer neuer Details und Geschichten zu vertreiben, gibt es das Frühlings-Wimmelbuch jetzt im handlichen Sonderformat. So passt es nicht nur in jede Handtasche und jeden Rucksack, es ist auch ein ideales Mitbringsel!

Empfohlen für Kinder von 2 bis 6 Jahren.

Britta Sabbag: Das Leben ist (k)ein Ponyhof

Antonias Leben ist perfekt. Bis ihre Mutter sie dazu verdonnert, auf ihren leicht senilen Stiefvater aufzupassen, während sie selbst sich in einem indischen Ashram vergnügt. Dabei hat die Karrierefrau Antonia für so etwas nun wirklich keine Zeit. Schliesslich steigt sie gerade zur Partnerin in einer Unternehmensberatung auf und will ihren langjährigen Freund und Kollegen heiraten. Zurück im Heimatkaff stellen Walters Schrullen Antonia gehörig auf die Probe. Bald steht ihr ganzes Leben Kopf. Oder lernt sie vielleicht gerade erst zu leben?

Barbara Rose: Post für den Osterhasen

Ostern steht vor der Tür, doch der Osterhase hat dieses Jahr keine Lust, Eier zu verteilen. Warum schreiben ihm eigentlich die Kinder nicht ihre Wünsche? Das Christkind und der Weihnachtsmann bekommen doch auch Wunschzettel. Doch Ostern ohne Ostereier – das geht natürlich nicht. Die Waldtiere machen sich sofort auf den Weg. Sie müssen unbedingt jemanden finden, der dem Hasen einen Brief schreiben kann. Ob sie das Osterfest noch retten können?

Und noch ein wundervolles Buch:

Albert Sixtus: Die Häschenschule

Experiments on 700m²

I started my scientific career with budding yeast then moved on to mice during my time as a postdoc. My former boss used to joke what would be next: elephants? Now my new field of experimentation includes myriads of microorganisms, bugs, worms and other small critters. It is a 700m² veggie garden I rented for the duration of five years. It all started quite harmless. When we moved to the countryside I started to work a small veggie patch. Encouraged by the extensive garden literature I started planting tomatoes, zucchini, peppers, herbs and a variety of fruit, which were especially welcomed by the kids. I also tried new crops or better old crops like a carrot which was already around when Napoleon reigned over Europe (let me say at that point that old varieties are not always better than the new ones) and soon discovered that 50 m² where not enough for the scale of agricultural experiments I had in mind. So a plan was formed to obtain new real estate in the form of a field outside the village.

The field I was able to rent was exactly that: a field. Nobody had worked it for several years and it looked like a meadow. I found a farmer who plowed it in the fall and then the real work started the following spring. In the winter months I had drawn up several elaborate plans of how to arrange the vegetables I wanted to grow depending on their mutual likes and dislikes. And I can tell you there is a lot to consider. Only when the time to saw and plant came, I forgot that plan at home and ended up playing it by ear. I can't tell you if it mattered but compared to the neighboring plot mine looked pretty pathetic with weed sprouting everywhere and the rows being higgledy-piggledy.

Also it was a constant fight against snails who find young plants very tasty and potato beetles who seemed to materialize out of nowhere. As I grow my veggies organically and thus don't use poison (or inorganic fertilizer) the most effective means against such pests is mechanical destruction. For out standers it my seem disgusting when I cut the snails in two with scissors but when it comes down to killing snails or coming in the morning to find all freshly planted salad gnawed down to skeletons I prefer the first.

Nonetheless the harvest was more then four people (two of them kids with set opinions about what they like and dislike) could eat, so our neighbors and friends got to share the bounty.

Now I can look back on two planting seasons. Planting and growing and especially eating your own vegetables is very rewarding. I think it speaks to the cavemen gens left over in all of us when the shed is well stocked with potatoes, onions, carrots, parsnips, beets and squash and the freezer is full to

Onions, garlic and carrots as co-culture, potatoes in the background.

Broccoli, French spinach and potatoes, in the background a peach tree.

bursting. I grow most of the seedlings and though it is a lot of backbreaking labor it is fascinating to see something grow out of a little seed to something you can eat within a few weeks or month.

I myself find potatoes the most rewarding crop. From one potato you lay in the ground in April there will be a dozen come harvest time in fall if you weeded them and defended them against potato beetles and the weather gods did mean it kindly. The harvest then is like digging for gold and you never know what to expect before you break the ground and go looking for the spuds with your bare hands. Mistakes you make are quickly forgiven. With some crops you can try again that same year with others the next planting season. But with veggies nothing is permanent and you are given a new chance shortly. Sometimes you have to concede that a specific crop is not going to grow well in your soil or climate (I tried growing melons which tasted like water) or that it grows like crazy but you don't like it (that was the case with chard) or that it grows very well you like it and still can't eat everything. Luckily there are always friends who will help you with those.

Except in the case of the 85 Hokkaido squash I harvested this year. Such unexpected (or maybe I should have expected it because I planted eight

Lean-to glasshouse on the patio as nursery.

plants) successes force you to also conduct culinary experiments, which eventually enrich your menu immensely. So let me conclude by saying that growing my own veggies not only gives me a whole body workout in fresh air but also fresh, organic and tasty ingredients for my kitchen and it is a activity the whole family can join in.

Melanie Neutzner

Rezepte

Bärlauch-Frikadellen

Zubereitung: 45 Minuten – Zutaten für 4 Personen
2 Scheiben Toastbrot, 1 Zwiebel, 80 g Bärlauch
500 g gemischtes Hackfleisch 2 EL Magerquark
1 Ei, Salz, Pfeffer, 2 EL Öl, 250 g passierte Tomaten
150 g Crème fraîche, 2 EL Ajvar (Paprikapastete)
Und: Öl zum Formen

Zubereitung:
1. Das Toastbrot in kaltem Wasser einweichen. Die Zwiebel schälen und fein würfeln. Den Bärlauch waschen, trocken schleudern und ohne harte Stiele hacken. Das Brot ausdrücken und zerpflücken, mit der Zwiebel und dem Bärlauch zum Hackfleisch geben. Quark und Ei hinzufügen, alles gut mischen und mit Salz und Pfeffer kräftig würzen.
2. mit eingeölten Händen aus der Masse acht Frikadellen formen. Öl erhitzen, die Frikadellen darin bei nicht zu starker Hitze auf jeder Seite 7-8 Minuten braten. Herausnehmen und warm stellen.
3. Für die Sauce die Tomaten und die Crème fraîche in die Pfanne geben und aufkochen. Ajvar einrühren und die Sauce salzen und pfeffern. Die Frikadellen mit der Sauce anrichten.

Gebackene Holunderblüten

Zubereitung: 30 Minuten – Zutaten für 16 Stück
50 g Butter, 200 g Mehl, Salz, 250 ml Mineralwasser, 2 Eier
1 Päckchen Vanillezucker, 1 EL Zucker
16 frisch gepflückte Holunderblüten mit Stiel
(Die Holunderblütenzeit ist nur kurz. Von Mitte Mai bis Anfang Juni steht der Holunder in voller Blüte. Die Blüten für die gebackenen Holunderblüten sollten frisch aufgeblüht sein und dürfen beim Pflücken nicht abfallen.)

Zubereitung:
1. Die Butter schmelzen. Das Mehl mit 1 Prise Salz und dem Mineralwasser glatt rühren. Die Eier trennen. Die Eigelbe und die Butter unter den Teig rühren. Die Eiweisse mit dem Vanillezucker und Zucker steif schlagen und unterheben. Die Holunderblüten verlesen.
2. Öl oder Butterschmalz in einem flachen Topf erhitzen. Es ist heiss genug, wenn an einem ins Fett getauchten Holzlöffel Bläschen aufsteigen.
3. Die Holunderblüten am Stiel anfassen, in den Teig tauchen und mit dem Stiel nach oben in das heisse Fett tauchen und goldbraun ausbacken. Gebackene Holunderblüten auf Küchenpapier abtropfen lassen.

Das schmeckt dazu: Joghurtcreme: 150 g Naturjoghurt mit 150 g saure Sahne und 1 EL Honig glatt rühren. 1 EL Zucker mit 2 Prisen Zimt mischen und über die Honigcreme streuen.

Gedünstetes Frühlingsgemüse fein kombiniert

Zubereitung: 25 Min. – Zutaten für 4 Personen
1 Bund Möhren, 2 Bund Frühlingszwiebeln, 2 EL Butter, 2 TL Zucker
200 ml Gemüsefond oder –brühe, 2 EL Pinienkerne,
½ Bund Petersilie, Salz, Pfeffer, Etwas abgeriebene Schale von einer Bio-Zitrone

Zubereitung:
1. Die Möhren putzen, schälen und in 10 cm lange Stücke schneiden, dicke Möhren vorher längs halbieren. Die Frühlingszwiebeln waschen, putzen und in ca. 10 cm lange Stücke schneiden.
2. In einer Pfanne die Butter erhitzen und den Zucker darin schmelzen. Die Möhren 2 Min. darin andünsten, dann Fonds und Brühe angiessen. Zugedeckt bei schwacher Hitze 7 Min. weiterdünsten. Die Frühlingszwiebeln zufügen und 2 Min. mit garen.
3. Inzwischen die Pinienkerne in einer Pfanne ohne Fett anrösten. Die Petersilie waschen, trocken schütteln und hacken. Das Gemüse mit Salz, Pfeffer und Zitronenschale würzen. Die Petersilie und die Pinienkerne aufstreuen.
Dazu passt: Kalbsmedaillons, Rinderfilet oder Hähnchenbrustfilet

Tomatensalat mit Knusper-Croûtons

Zubereitung: 20 Minuten – Zutaten für 4 Personen
8 mittelgrosse Strauchtomaten, 1 reife Avocado, 1 EL Zitronensaft
Salz, gem. Pfeffer, 150 g Schafskäse, 2 Schalotten, 1 Knoblauchzehe 2 EL weisser Balsamico-Essig, 4 EL Olivenöl
2 Scheiben Mehrkorn-Toastbrot, 5 Stängel glatte Petersilie

Zubereitung:
1. Tomaten abspülen, trocken tupfen, halbieren und die Stängelansätze herausschneiden. Tomaten in fingerdicke Scheiben schneiden. Eine grosse Salatplatte mit den Tomatenscheiben auslegen.
2. Von der Avocado das Fruchtfleisch in Spalten vom Stein schneiden. Avocadospalten schälen, sofort mit Zitronensaft beträufeln, mit Salz und Pfeffer würzen und auf den Tomatenscheiben anrichten.
3. Den Schafskäse in kleine Würfel schneiden und auf dem Tomatensalat verteilen.
4. Schalotten und Knoblauch abziehen und in kleine Würfel schneiden. Essig mit Schalotten-, Knoblauchwürfeln, Salz und Pfeffer verrühren. 2 Esslöffel des Olivenöls unterschlagen. Den Salat mit der Marinade beträufeln.
5. Restliches Olivenöl in einer Pfanne erhitzen. Toastbrotscheiben in kleine Würfel schneiden und in dem heissen Olivenöl von allen Seiten knusprig braun braten, dabei ständig wenden.
6. Petersilie abspülen und trocken tupfen. Die Blättchen von den Stängeln zupfen und die Blättchen klein schneiden.
7. Die Croûtons auf dem Tomatensalat verteilen und mit der Petersilie bestreuen.
8. Den Tomatensalat kräftig mit Pfeffer würzen und sofort servieren.

+IT News+++IT News+++IT News++

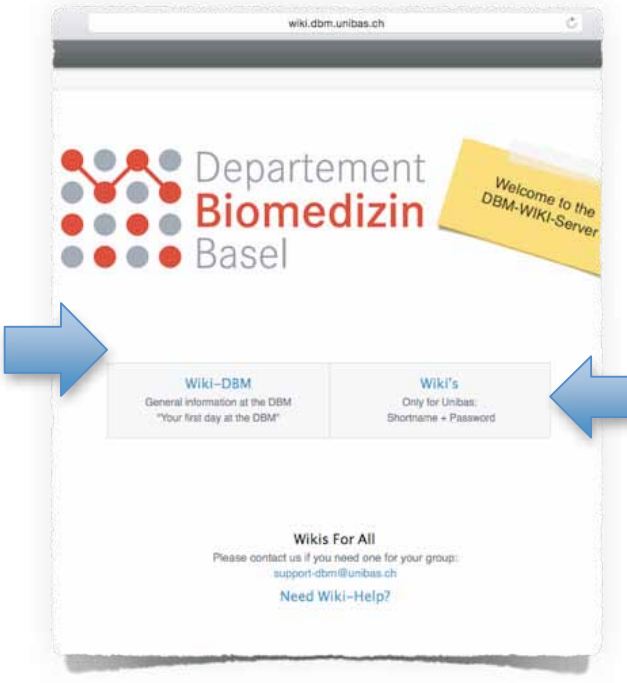
Wiki ("wiki" = Hawaiian for "fast")

We have updated our new DBM-Wiki.

It simplifies the manner in which teams can easily access many different types of information. Say that someone wants to expand and/or archive this information. Or perhaps that they wish to quickly search for something, and of course access all of the information relevant to that theme. At the moment you can access a lot of information about starting work and working procedures at the DBM on the DBM-Wiki.
We would like to make the wiki available to everyone. In that way you also have the possibility to start a wiki and to share information, or further expand on information already there, be that in through open access to the whole DBM, or through restricted access limited to research groups.

The DBM-Wiki can be found at http://wiki.dbm.unibas.ch

"Wiki-DBM" will bring you to various information on IT offers, our contact information, how one accesses a file server, how to reserve rooms, instructions and much more...



"Wiki's" will bring you to the wikis that have been made accessible to all by other individuals at the DBM. Locked wikis can only be accessed when you have registered with your Unibas login (relevant access rights are required)

Would you like your own wiki for your research group? If so then please let us know by email. We will set up your individual wiki. All other change you can quickly and easily make yourself.

If you require help with the administration or the use of the wiki then just click on "Need Wiki-Help".

Pisanka – Zeichen der Verbundenheit

Mancher wird sich gefragt haben, woher die schön verzierten Eier auf dem Titelblatt stammen. Sie kommen aus der Ukraine. Die Geschichte der Pisanka reicht in die heidnische Zeit zurück. Das Brauchtum hatte sich von der heutigen Ukraine bis Ungarn und Tschechien ausgebreitet. Die von Anfang an verwendeten Symbole wurden erst später, in der Ukraine im 8. und 9. Jahrhundert, von christlichen Inhalten überlagert und uminterpretiert. Immer wiederkehrendes Motiv ist etwa die Sonne als Lebensspender, die in der orthodoxen Zeit als Symbol für Jesus Christus gedeutet wird. Spiralmuster erinnern an Mühlen, in denen das Korn verarbeitet wurde. Sie stehen für Leben und Entwicklung. Punkte bezeichnen Werden und Entstehen, Gitter die Trennung von Gut und Böse. Symbolisch aufgeladen sind natürlich auch die verwendeten Farben: Gelb steht für die Sonne, Rot für Blut und neues Leben, Schwarz für die Nahrung spendende Erde.

Über Jahrhunderte hinweg waren Pisanka-Eier Kommunikationsmittel und Ritualbegleiter. Sie wurden zu besonderen Ereignissen, wie Geburt, Taufe und Hochzeit verschenkt, und waren Zeichen der Verbundenheit. Wer keinen Kontakt mehr zu jemandem haben wollte, der bekam von ihm auch kein Ei mehr. Umgekehrt galt das freilich auch. Eine junge Frau, die von einem Mann begehrt wurde, liess ihm ein Pisanka-Ei zukommen, auf dem beispielsweise Blätter eines Apfelbaums gemalt waren. Von daher erklärt sich auch, dass Pisanka nicht auf die Osterzeit beschränkt war.

In den Herkunftsländern hat sich die Technik nur noch vereinzelt gehalten. Dafür sind ihre Freunde und Liebhaber inzwischen über die ganze Welt verstreut. Daneben gibt es einige grosse Museen, wie das Pisanka-Museum in der ukrainischen Stadt Kolomyja oder das Museum Wander Bertoni im österreichischen Winden am See.

Das Bemalen hat seinen rituellen Charakter weitgehend verloren. Früher musste das Wasser zum Anrühren der Farben in drei verschiedenen Quellen geschöpft werden. Das war nur an bestimmten Tagen erlaubt. Das Wasser musste in speziellen Lehmgefässen aufbewahrt werden, die nur berühren durfte,

der die Eier auch bemalte. Die Verwendung von Mustern und Motiven waren regional, ja mitunter von Ortschaft zu Ortschaft, unterschiedlich – mal waren die Muster stark abstrahiert mit Mäandern, Kreisen, Dreiecken und Kreuzen, mal filigran ausgearbeitet, mal deutlich erkennbar mit Anleihen aus der Pflanzen- und Tierwelt.

Mancher Volks- und Aberglaube hängt mit diesen Eiern zusammen. Ging früher ein Ei beim Bemalen kaputt, war das ein Zeichen dafür, dass schlechte Energie vom Menschen auf das Ei übergegangen ist. Es musste zerstossen und in der Erde vergraben werden. Pisanka-Eier sind das Ergebnis eines komplizierten Verfahrens. Kurz gesagt: Das Ei wird sukzessive an den Stellen mit Wachs beschichtet, wo die Eischale keine Farbe annehmen soll. Die aufgetragenen Wachsstellen halten die darunter liegenden Flächen für die Farbe frei, die ein Ei vor der anschliessenden Färbung jeweils hat, und verhindern, dass das nächstfolgende Farbbad dorthin gelangen kann. Benötigt wird neben Bienenwachs eine sogenannte Kistka, ein an einem dünnen Stöckchen befestigte Miniaturtrichter, das sich vom russischen Kostka (Knochen) herleitet, sowie Spezialfarben fürs Farbbad, in das die Eier gelegt werden. Zunächst werden die Eier ausgeblasen, sorgfältig gereinigt und entfettet. Dann werden die Löcher vom Ausblasen verschlossen. Mit einem Bleistift können die filigranen Linien für die Motive auf die Schale vorgezeichnet werden. Eine ruhige Hand ist Voraussetzung.

Die Informationen wurden einem Artikel der Badischen Zeitung entnommen.

Celine Furtwängler, Experimental Immunology

My name is Celine Furtwängler, I am 19 years old and I am from the sunny Freiburg im Breisgau.
Many of you will probably ask themselves what a 19 year old girl from Freiburg is doing here at the DBM in Basel. As some will have guessed it is not a Bachelor or Master's thesis that brings me here. It is unfortunately not yet my doctoral thesis. The answer to this riddle will present itself as my article continues, but first I would like to introduce myself.

My name, my age and my place of origin you know already. But who is this mysterious unknown, who is walking around the 3rd floor? I was born on the 26th of January 1996 in Freiburg and am a true "Freiburger Bobbele", as we would say. Even at an early age I discovered my interest in experimenting and research. On the weekends I went outside on

'discovery tours', almost no forest in Freiburg and the surrounding area was safe from me. And even if I was not outside, there were a lot of experimental possibilities in the kitchen. For example: why do gummi bears grow if they are in water?

At the age of six I went to primary school (Grundschule) and four years later I went to the Wentzinger-Gymnasium. From the fifth grade on if somebody asked me what my favourite subject was, I was already answering "Biology". Then in the 10th grade I had the opportunity to do a career-orientated internship at the Biological Institute of the University of Freiburg. My interest in Biology persisted till my graduation in 2014 and has not changed.

At nine years old I started to learn the French Horn, which I am still playing today at the Musikverein Lehen. I like to listen to alternative and indie rock / pop. One of my absolute favourite bands is the Arctic Monkeys. During my time at the Gymnasium I discovered my secret passion for the theatre. I was part of a cabaret group as well as being a part of some musical projects at our school. Later, I also started to play in a group for young adults at the Stadttheater Freiburg. I was also not completely inactive when

it came to sports. I played handball at the HSG (Hanballspielgemeinschaft) Freiburg. Skiing and snowboarding are still my absolute favourite sports. When I have time and I can find a couple of hungry test subjects I love to cook. My most favourite food is "Badische Käsespätzle", and otherwise I like Asian cuisine and most importantly I love cucumber salad.

And now for the answer to the riddle:
At an academic trade fair in Freiburg I discovered an information booth for the Fachhochschule Nordwest-Schweiz (FHNW) Basel. Their course in Molecular Life Sciences especially aroused my interests. The FHNW invited all interested people to an open-door day. I was so excited and for me one thing was clear: that was

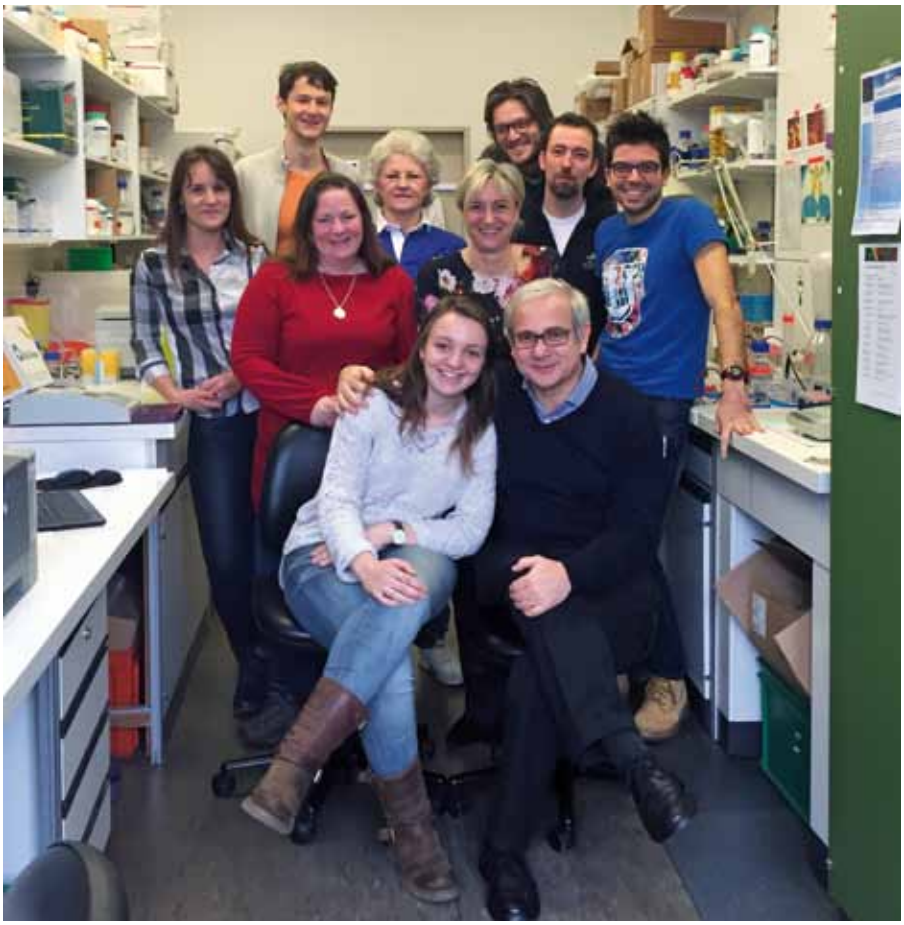
where I wanted to study! But there was still one last hurdle to master, in order to attend the FHNW I needed a one year internship in a laboratory. The only question was where? I researched for suitable internships and I was very glad when I got the news from Heidi Hoyermann that there might be a suitable position at the DBM. Shortly afterwards I got an invitation for a job interview from Prof. Gennaro De Libero. I was very pleased when I received the position and in September 2014 I started in the Experimental Immunology Lab.

At the beginning everything was new and unfamiliar to me. Through the kind and active support of the whole lab team I found it much easier to acclimatize. I realized quite fast that I liked working in the Lab. I learned many techniques, which are important to know for the everyday life of a laboratory and I am still learning new things every day.

I really do like it here at the DBM and I also like Basel very much. I have met a lot of nice people here. At the moment I am still living at Freiburg i. Br. And commute everyday between Freiburg and Basel. When the university begins I would really like to move to Basel or at least closer to Basel.

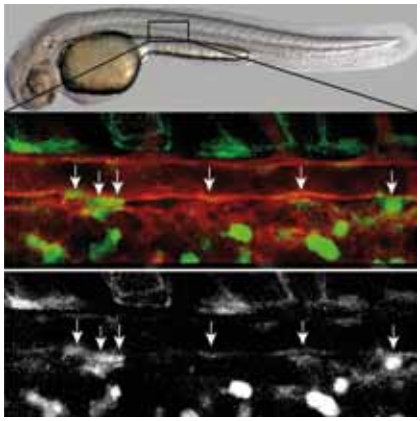
My Schwyzerdütsch is also getting better, now I can even understand the menu card at the Centrino! Please note: Fleischvogel (engl.: meat-bird) is not bird meat it is actually a Rinderroulade in German (engl.: Beef roll)!

I have already been here for six months, so half a year. The time flies and the first half of my internship is unfortunately already over. I am curious and full of anticipation what the next half year will bring.



VORSCHAU PREVIEW

In der nächsten Ausgabe . . .



. . . bringen uns Claudia Lengerke und ihr Team auf den neuesten Stand in ihrem Forschungsgebiet Stem Cells and Hematopoiesis

. . . erfahren wir von Roy Allenspach mehr über den Bereich Biosafety am DBM

. . . erleben wir mit Ronny Nienhold die Faszination von Bildern

. . . bummeln Katharina Leonhards und Florian Marquardsen mit uns durch ihre Heimatstadt Trier

. . . lassen wir die Sommerferien aus Kindertagen wiederaufleben

Der Frühling ist die schönste Zeit!

Der Frühling ist die schönste Zeit
Was kann wohl schöner sein?
Da grünt und blüht es weit und breit
Im goldnen Sonnenschein.

Am Berghang schmilzt der letzte Schnee,
Das Bächlein rauscht zu Tal,
Es grünt die Saat, es blinkt der See
Im Frühlingssonnenstrahl.

Die Lerchen singen überall,
Die Amsel schlägt im Wald!
Nun kommt die liebe Nachtigall
Und auch der Kuckuck bald.

Nun jauchzet alles weit und breit,
Da stimmen froh wir ein:
Der Frühling ist die schönste Zeit!
Was kann wohl schöner sein?

(Das Gedicht wird im Allgemeinen Annette von Droste-Hülshoff zugeschrieben, der wirkliche Verfasser ist aber nicht bekannt)