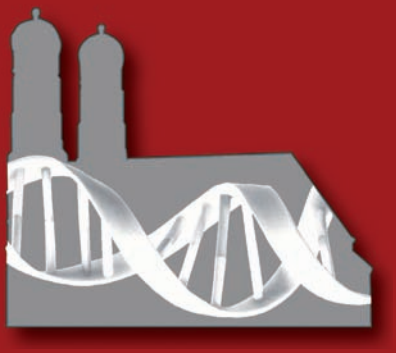
< interact >

PhD Symposium 2009



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PROGRAM

Ludwig-Maximilians-Universität
Main Building

Geschwister-Scholl-Platz 1

Munich

April, 2nd 2009

Schedule < interact > 2009

8.00 - 8.45 am	Check-in
9.00 am	Welcome
9.10 - 10.10 am	Student talks I (J. Frauenfeld, A. Faber, A. Biegert)
10.10 - 11.10 am	Keynote lecture Alfred Wittinghofer
11.10 am - 01.00 pm	Coffee break Poster session I (even numbers)
1.00 - 2.00 pm	Lunch
2.00 - 3.20 pm	Student talks II (Y. Kienast, C. Frauer, D. Siepe, D. Paquet)
3.20 - 5.10 pm	Coffee break Poster session II (uneven numbers)
5.10 - 6.10 pm	Keynote lecture Tim Hunt
6.10 - 6.30 pm	Awards - speaker & poster prizes
6.30 - open end	Dinner & Party

Table of contents

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Welcome

Dear PhD student,

The < interact > organizing committee kindly welcomes you to Munich's 2nd PhD symposium. < interact > 2009 is organized for and by PhD students in line with the previous event in 2007. We are happy to announce that more than 400 PhD students in Munich signed up for today's symposium and will present interesting talks and posters from a broad range of research fields within the sector Life Sciences. This will allow you to set up new networks and to discuss scientific results in an informal, but motivating atmosphere.

The experience and success of the first < interact > symposium in 2007 were the ideal starting point for us to initiate a follow-up event nine months ago. The composition of experienced and newly recruited organizers was perfect in order to improve this year`s PhD symposium. We decided for a different location being now in the center of Munich, were able to convince two renowned and outstanding keynote speakers to join our event and redesigned our website - just to mention some changes.

To further improve the next < interact > in 2010, we would be grateful for your feedback. Please mail to:

info@interact-munich.org

We wish you an exciting day and hope that you will be inspired by other PhD students - interact!

Your organizing team

Organizing committee

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Viola Maier Dorothee Neukirchen Christiane Simon

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Maximiliane Hilger, Anne Kreile, Jonathan Mackinnon & Anne Schümann

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Welcome by the Major of Munich

Nach wie vor zählt die Region München nicht nur deutschland-, sondern europaweit zu den ersten Life Science-Adressen. Geprägt wird der exzellente Rang und Ruf des Standorts von den zahlreichen universitären und außeruniversitären Wissenschafts- und Forschungseinrichtungen in und um München, von den beiden Münchner Elite-Universitäten, der Ludwig-Maximilians-Universität und der Technischen Universität München, von den Life Science-Clustern in Martinsried und Weihenstephan, den Max-Planck-Instituten für Biochemie, Neurobiologie und Psychiatrie, dem Helmholtz Zentrum München, den fast 200 Unternehmen der Life Science-Branchen, die im Großraum München ansässig sind, sowie der Vielzahl von unternehmensnahen Dienstleistern und Venture Capital Firmen in unserer Stadt.

Nicht zu vergessen das BioM Clusternetzwerk, das zusammen mit der Bio-Tech-Region München im Jahr 2007 als „ausgewählter Ort“ im bundesweiten Innovationswettbewerb „365 Orte im Land der Ideen“ ausgezeichnet wurde.

Als Motor der erfolgreichen Entwicklung hat sich hier aber auch die enge Zusammenarbeit zwischen den verschiedenen natur- und biowissenschaftlichen Forschungseinrichtungen sowie den Anwendungszentren und Unternehmen aus dem Health-Care- und Life Science- Sektor erwiesen.

Das alles schafft auch für das zweite <interact>-Munich PhD Symposium, das sich ebenfalls der Förderung des interdisziplinären Austauschs junger Doktoranden und renommierter wissenschaftlicher Fachleute verschrieben hat, einen geradezu maßgeschneiderten Rahmen. Sehr gerne habe ich dafür wieder, wie schon für die Premiere 2007, die Schirmherrschaft übernommen und wünsche auch der Nachfolgeveranstaltung 2009 einen vollen Erfolg!

Christian Ude

Welcome by the Chairman of the Max-Planck-Society

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Cooperation becomes more and more crucial for innovative research. Gone are the days when researchers single-handedly made groundbreaking discoveries. Works of genius like those from Gregor Mendel, a monk who discovered the laws of heredity in the garden of his monastery, Albert Einstein, who established the theory of relativity on his kitchen table or Robert Koch, a country doctor who identified the anthrax pathogen in his tiny laboratory, are almost unthinkable today. Research is about teamwork within an institute and beyond institutional boundaries - albeit individual creativity is still an essential condition within the team.

A recent article in Nature (Vol. 455, October 9, 2008) examined the fact that less than 1% of papers are written by single authors today. They are also much less frequently referred to than team publications. It was also shown that teaming up with someone from another institution produces work that is more often cited and has greater impact, on average, than teaming up with someone from down the corridor. To a great extent, inter-institutional collaboration also appears to be highly creative and successful.

This is why I am delighted to see Munich's life sciences doctoral students endeavoring to establish contact between the city's various research institutions. The Interact Symposium represents an excellent opportunity for this. I am particularly pleased that the initiators and organizers are students at the Max Planck Institutes of Biochemistry, Neurobiology and Psychiatry.

Dear students,

the symposium not only provides an opportunity to present your own research and to get to know the work of your colleagues. It might also lay the foundation for successful research projects after the completion of your doctoral studies. I hope that you have an interesting and inspiring day!

Peter Gruss

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the source event
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(Accounting)

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Keynote speaker
Tim Hunt

What Tim Hunt liked about Chemistry at school was his teacher's emphasis on principles, rather than facts. This became a defining feature of his science later on in life. He established a simple principle of cell cycle regulation: entry into mitosis requires the making of an enzyme, and getting out of mitosis requires its destruction. These cell cycle regulatory enzymes are known as cyclins and their associated cyclin-dependent protein kinases as CDKs.

When Tim started his scientific career in 1964 as a biochemistry PhD student in Cambridge he had no idea that he would end up studying the cell cycle. His primary interest lay in the control of translation of mRNA. Using rabbit reticulocytes for studies of haemoglobin synthesis he learned to appreciate the advantages of simple model systems. He found that ribosomes are evenly spaced along globin mRNA, and never formed a queue, unless forced to do so. After his PhD in 1968 he moved to New York and continued to work on translational control where he made the curious discoveries that addition of tiny amounts of oxidized glutathione or double-stranded RNA entirely killed protein synthesis in reticulocyte lysates. Years later the effect of oxidized glutathione was linked to a loss of reduced NADP and glucose-6-phosphate involving the action of thioredoxin and thioredoxin reductase. Concerning the inhibition by dsRNA, it was most striking that high levels of dsRNA did not inhibit protein synthesis although amounts as low as one molecule per lysed cell equivalent were sufficient to be effective - early signs of RNAi looming on the horizon. It eventually turned out that inhibitory protein kinases lay behind the control of haemoglobin synthesis.

Keynote speaker
Tim Hunt

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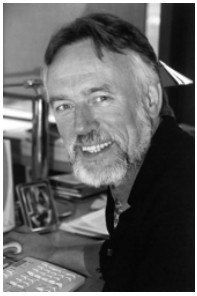
Towards the end of the 1970s Tim concentrated on changes in protein synthesis in sea urchin and clam eggs after fertilization. In 1982 a simple experiment changed his scientific life. Asking the question whether the proteins made after fertilisation were the same as the ones made after parthenogenetic activation of the eggs, he noticed a protein band in the autoradiographs that, contrary to all the others, got weaker and disappeared. Later that same day, John Gerhart told him about the activity of MPF that he and Marc Kirschner were studying in Xenopus oocytes. MPF activity vanished between meiosis I and meiosis II, and needed new protein synthesis to reappear, potentially linking Tim's discovery on the protein level to a physiological entity. What followed was an extensive characterisation of this and other "cyclins" and finally, in 1986 the cloning and sequencing of sea urchin cyclin B. The activity in Xenopus oocytes was shown to contain a B-type cyclin as well as p34cdc2. For his groundbreaking work, Tim Hunt was awarded the Nobel Prize in Physiology or Medicine in 2001, together with Leland Hartwell and Paul Nurse.
Continuing work on cell cycle control at Cancer Research UK, London, Tim's focus is now on the structure, function and destruction of CDKs that control the onset of mitosis and the return to interphase. Following a chance discovery of the involvement of the calcium-activated protein phosphatase (calcineurin) at fertilization, he is now very interested in how the mitotic phosphorylations put on by CDKs are taken off at the end of mitosis, and how futile cycles are avoided; the flipflop switches that ensure either high kinase activity (in mitosis), or high phosphatase activity (in interphase).

Prof. Hunt will present a talk today entitled:

„Getting In and Out of Mitosis“

Keynote speaker
Alfred Wittinghofer



Alfred Wittinghofer studied chemistry and received his PhD degree from the German Wool Research Institute (German acronym: DWI) in Aachen with a dissertation on the chemical synthesis of insulin.
In 1971 he became a postdoctoral fellow at the University of North Carolina, where his main research interest was the modification of proteins. In 1974 he returned to Germany to work as a research staff member at the Max Planck Institute for Medical Research in Heidelberg. In 1980 he became a group leader and focused on the structure-function relationship of oncoproteins and on GTP-binding proteins. In 1992 he qualified as professor at the University of Heidelberg. Since 1993 he has been head of the Department of Structural Biology at the Max Planck Institute of Molecular Physiology in Dortmund.
The subjects of his work at the MPI in Dortmund are functional, mechanistic and structural studies on GTP-binding proteins and their regulatory factors and effectors.
The GTP-binding oncoprotein Ras is a signal transduction protein and controls intracellular signalling networks, that regulate several processes eg. proliferation, differentiation, apoptosis, and cell migration. Ras acts as a binary molecular switch, that can signal-dependently be turned on by Guanine nucleotide exchange factors (GEFs) and GTP-binding or turned off by GTPase activating proteins (GAPs) and GDP-binding. Point-mutations can lead to unlimited cell growth and cancer. Wittinghofers group analyses Ras´ conformational changes by X-ray and NMR methods and was thereby able to solve the three-dimensional structure of Ras-GTP and to describe the conformational change in GTP-binding proteins. His group could also describe interactions of Ras with GAPs, GEFs and effectors like GAP-mediated GTP hydrolysis-mechanisms and why the reaction is blocked in oncogenic mutants of Ras. The studies of the structure of Ras-effector complexes and their thermodynamics are a starting point for the development of anti-Ras drugs.

Another small GTPase, Ran, which is a nuclear transport regulator, is also characterized in Wittinghofers department to elucidate its role in nuclear transport. The structure of the Ran-RCC1 (GEF) complex and the mechanism of the GEF reaction are investigated by structural and kinetic studies and the Ran-RanGAP interaction by structural and biochemical analysis. Also the mechanism of the RanGAP mediated reaction and studies on Ran-effector complexes like Ran-Importin and Ran-RanBD are part of Wittinghofers work and led to a high number of published structures and explanatory mechanistic models.

Another topic of his science are structural and mechanistic studies on effectors of Rac, Cdc42 and Rho, such as WASP, PAK and mDIA and the activation of effectors. Also structural studies on bacterial GEFs and GAPs for eukaryotic Rho proteins are developed in Wittinghofers group.

His group also investigates the Human Guanylate Binding Protein as a model for polymerizing GTP-binding proteins. Other projects deal with the filament-forming Septins, with the function of Arl proteins and with the structures of Arl2/3 and complex with PDE.

Alfred Wittinghofer is honorary professor of biochemistry in the Department of Chemistry of the Ruhr University Bochum since 1993. He has received several awards, including the Jouis-Jeantet Prize (2001), the German Cancer Prize (2003), and the Otto Warburg Medal of the Society for Biochemistry and Molecular Biology (2003).

PhD student talks I

Jens Frauenfeld

Gene Center, LMU Munich

Cryo-EM of an active 70S ribosome-SecYEG complex in its membrane environment
(poster no. 36)

Amory Faber

Biocenter, LMU Munich

Solving the Tower of Hanoi Puzzle - effects of frontal lobe damage
(poster no. 32)

Andreas Biegert

Gene Center, LMU Munich

Homology searching beyond BLAST
(poster no. 10)

Yvonne Kienast

Neurooncology, Clinical center LMU Munich

Brain metastasis formation: Real-time imaging reveals mandatory, inefficient and unsuccessful steps
(poster no. 73)

Carina Frauer

Biocenter, LMU Munich

A versatile non-radioactive assay for DNA methyltransferase activity and DNA binding
(poster no. 37)

Dirk Siepe

MPI of Biochemistry

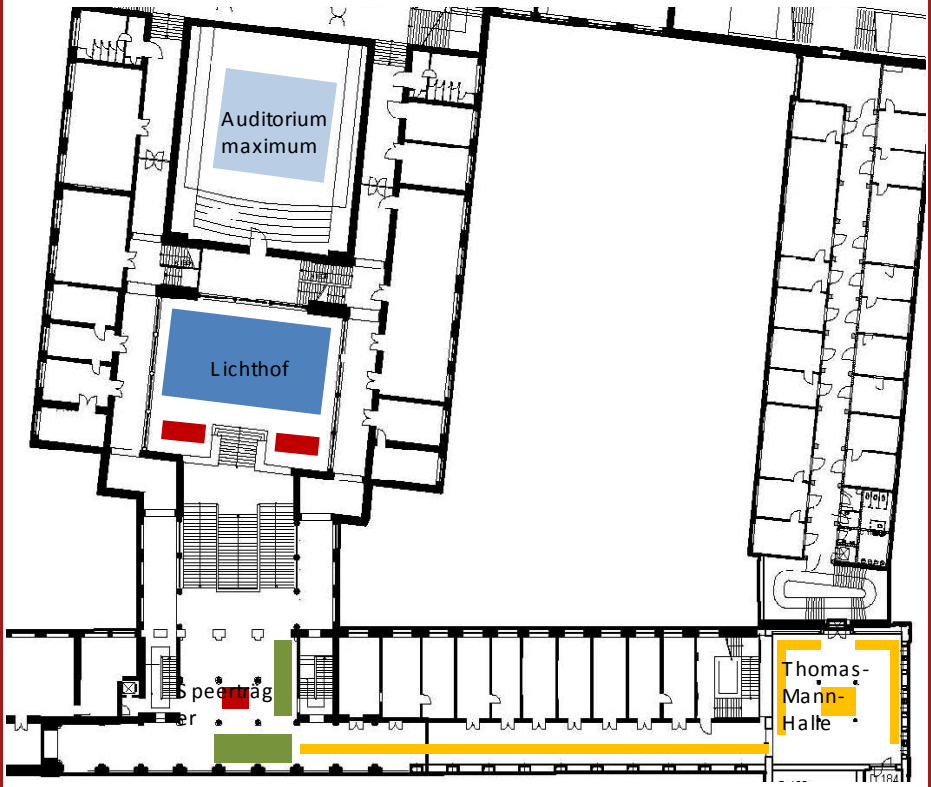
The prolyl isomerase Pin1: A pivotal new twist to the ubiquitin-proteasome system (UPS)
(poster no. 117)

Dominik Paquet

Adolf-Butenandt-Institute, LMU Munich

A zebrafish model of Alzheimer‘s Disease
(poster no. 95)

Map poster sessions



1st floor

posters

talks

coffee station

sponsors

lunch/ party

Name	Title	No.
Ahmad, Nafees	Pitx3 regulates transcription factor AP-2α	1
Andrade, Kátia	Recurrence quantification analysis of single auditory evoked potential acquired in the MR environment	2
Awad, Hamzeh	The validation of the international classification of functioning, disability and health (ICF) in diabetes as a case in point. physical therapists perspective	3
Barbarossa, Maria Vittoria	Delay models for quorum sensing of pseudomonas putida	4
Baxter, Matthew	Cigarette smoke exposure attenuates the biological function of endogenously occurring anti-inflammatory prostanoid PGE2 in a pre-clinical model of Chronic Obstructive Pulmonary Disease	5
Behl, Stephan	The role of functional diversity in phytoplankton communities	6
Bengel, Doris	Pitchfork regulates cilia disassembly and embryonic pattern formation	7
Berger, Sandra	Interaction between Gogo and Flamingo regulates R8 axon targeting	8
Bianchi, Elisa	Find the target: identification of novel guidance cues	9
Biegert, Andreas	Sequence context-specific profiles for homology searching	10
Brand, Fridolin	Resilience research: a valuable option for sustainability science?	11
Brünger, Katharina	Control of translation by phosphorylation of ribosomal proteins	12
Cerovac, Vesna	Targeting the PI3K/Akt pathway for pituitary tumor treatment	13
Chan, Gary	Human Spindly is required for kinetochore localization of dynein but not for the stripping of checkpoint proteins	14
Chanarat, Sittinan	Investigation of a link between THO/TREX complex and a splicing factor, SYF1	15
Chang, Eugene	Computational mathematics for understanding the electrogram in cardiac arrythmia	16

Name	Title	No.
Cherian Kallukalam, Bobby	Hypoxic preconditioning overcomes hypoxia induced delay in osteogenic differentiation of human mesenchymal stem cells	17
Cherian, Anoop V	Of worms and networks - a new perspective on the cell cortex	18
Christian, Jan	Cytopathicity of Chlamydia infection can be largely reproduced by expressing a single chlamydial gene, Chlamydial Protease-like Activity Factor	19
Cohrs, Christian	Characterisation of a new mouse line displaying osteoarthritis, chondrodysplasia and ectopic bone formation	20
Coordes, Britta	Translation initiation - a new role for the transcription factor CTK1	21
Czibere, Ludwig	The genetic dissection of anxiety: polymorphisms, gene expression and behavior in HAB/LAB mice	22
del Rio, Patricia	Retinal Mueller Glia-derived Neuroprotective Factors: Possible Candidates for Photoreceptor Survival	23
Diem, Olivia	Influence of antipsychotic medication on endogenous retrovirus (HERV) expression in human brain cells	24
Dietrich, Sabine	Chronic effects of a pharmaceutical mixture on Daphnia magna	25
Domes, Katrin	Function and regulation of the Cav 1.2 calcium channel in the cardio-vascular system	26
Dworsky, Alexis	The cultural evolution of the dinosaur	27
Ebert, Birgit	The role of mitochondrial dysfunction in astrocytes – a mouse model for brain ageing	28
Eichinger, Christian	Synaptonemal complex formation and pachytene checkpoint signaling are linked to the lateral element Red1	29
Elyada, Yishai M.	Different receptive fields in axons and dendrites underlie robust population coding in blowfly visual interneurons	30
Ertl, Claudia	Interaction between Helicobacter pylori and Integrin beta1	31

Name	Title	No.
Robel, Stefanie	Molecular mechanisms involved in astrogliosis	101
Rohrer, Stefanie	DNA transfer in Helicobacter pylori	102
Ruppert, Raphael	The role of Integrins and Integrin associated proteins in Leukaemia and Lymphoma	103
Schaefer, Karin	Myelin-specific Claudins in teleosts: Redundancy or functional specialization?	104
Schelter, Florian	Hif-1alpha in tumor cells triggers invasion and metastasis by modulating the microenvironment-controlling protease web	105
Schmeinck, Anne	Epigenetic regulation of EBV's life cycle	106
Schmidt, Sarah	Osteopetrosis of Kindlin-3 knockout mice is caused by impaired adhesion of osteoclasts	107
Schmidt, Thorsten	Control of centriole length by CPAP and CP110	108
Schneider, Martha	SARS-CoV accessory protein 7a is strongly stabilized by inhibition of the proteasome	109
Schnell, Bettina	HS-cells in the visual system of Drosophila melanogaster respond selectively to large-field horizontal motion conveyed via the L1 and L2 lamina pathways.	110
Schönegge, Anne-Marie	Structural Studies of Human Tripeptidylpeptidase II	111
Schub, Andrea	EBV/CMV-bispecific T cells for immunotherapy	112
Schuemann, Anne	Activity-dependent GABAergic plasticity in hippocampal slice cultures	113
Schulze, Christina	Transmitter inputs to motoneurons of multiply-innervated and singly-innervated muscle fibers of the extraocular muscles in monkey	114
Schumann, Kathrin	Immobilized and soluble chemokines cooperatively shape migration patterns of dendritic cells	115
Seizl, Martin	An ‚in vitro toolbox' for studying transcription initiation	116
Siepe, Dirk	The prolyl isomerase Pin1: a pivotal new twist to the ubiquitin-proteasome system (UPS)	117
Sikor, Martin	Resolving temporal and spatial heterogeneities in biological systems using single molecule fluorescence and microfluidic mixing	118

Name	Title	No.
Wollrab, Sabine	the pentagon module - a mathematical representation of a wide spread pelagic food web and its qualitative behaviour	134
Yen, Yi-Chun	Pharmacology of Neuropeptide S in a Mouse Model of Extremes in Anxiety-Related Behavior	135
Zilow, Sonja	Upstream of N-Ras (UNR) is involved in Translational Control of ADAM10	136
Zimmermann, Sandra	Effects of n3/n6 polyunsaturated fatty acids on inflammatory placental immune responses	137

Awards

Today, the best PhD student talk and the best posters in the categories „fascinating science“, „interesting method“ and „best presentation“ will be awarded. There are a prizes waiting for you like a digital SLR camera from Olympus.

You are the jury today!

Every participant of the < interact > symposium can vote:

First, vote for the best speaker!

Then vote for the best posters out of more than 100 presented posters by writing down the poster number on the ballot paper which is in your symposium‘s bag. At the entrance of the Audimaximum will be a voting box where you can drop your ballots.

What should you jugde?

Please do not rate the quality of the results alone. The design and the layout of the poster/ talk is as important as the motivation, the comprehensibility of the study and the enthusiasm of the presenter.

Please keep these criteria in your mind being a presenter yourself!
We expect your votes to be fair without favouring your friends or colleagues.

The winners will be announced before the beginning of the party!

Good luck!

Dear Interactee,

Did you enjoy < interact > 2009?

Do you like the idea of a PhD symposium in Munich?

Are you interested in taking part in the organization of the next < interact > in 2010?

The organizing committee consists of PhD students from several institutes being in different stages of their PhD studies. Therefore, we have a constant turn-over within the committee and are always looking for other PhD students who are interested to join us and to take over.

If you are interested to experience what it means to organize a PhD symposium with around 400 participants, to meet PhD students from other institutes and to „interact“,
then do not hesitate and just get in contact with us.

info@interact-munich.org

Subway U3

Universität -> Olympia-Einkaufszentrum

Uhr	Montag - Donnerstag						
19	01■	06	11■	16	21■	26	31✖
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1	21	51 V97					
2	21 V97						

Universität -> Fürstenried West

Uhr	Montag - Donnerstag						
19	04■	09	14■	19	24■	29	39
	49	59					
20	09	19	29	39	49	59	
21	09	19	29	39	49	59	
22	09	19	29	39	49	59	
23	09	19	29	39	49	59■	
0	09	19■	29	39✖	49	59✖	
1	10	40 V97					
2	10 V97						

Subway U6

Universität -> Garching Forschungszentrum

Uhr	Montag - Donnerstag									
19	03 53▼	08▼	13▼	18▼	23	28▼	33▼	40▼	43	50■
20	00■	03	10■	13▼	20■	23	31▼	41	51▼	
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0	01	11▼	21	31■	41	51■				
1	01▼ V93	21▼ V97	27 V97	57▼ V97						
2	21▼ V97									

Universität -> Klinikum Grosshadern

Uhr	Montag - Donnerstag						
19	01■	06	11■	16	21■	26	33■
	36	43■	46	53■	56		
20	03■	06	14	24	34	44	54
21	04	14	24	34	44	54	
22	04	14	24	34	44	54	
23	04	14	24	34	44	54	
0	04■	14	24■	34	44■	54	
1	10✖ V93	24 V97	49 V97				
2	10✖ V97						

Night bus N40

Universität -> Keilberthstrasse

Uhr	
1	41
2	41
3	41
4	41

Universität -> Solln

Uhr	
1	22
2	22
3	22
4	22

Taxi

Leopoldstrasse (Siegestor)

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