<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Session Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>7:00 pm</td>
<td>1 Ras: From Protein to Membrane I</td>
</tr>
<tr>
<td>Tuesday</td>
<td>9:00 am</td>
<td>2 Ras: From Protein to Membrane II</td>
</tr>
<tr>
<td>Tuesday</td>
<td>2:00 pm</td>
<td>3 Poster Session</td>
</tr>
<tr>
<td>Tuesday</td>
<td>4:30 pm</td>
<td>Chinese Tea and Beer Tasting</td>
</tr>
<tr>
<td>Tuesday</td>
<td>7:00 pm</td>
<td>4 Ras: Intracellular Processes</td>
</tr>
<tr>
<td>Wednesday</td>
<td>9:00 am</td>
<td>5 Rho: Proteins, Membranes, Cells I</td>
</tr>
<tr>
<td>Wednesday</td>
<td>2:00 pm</td>
<td>Visit to Old Suzhou</td>
</tr>
<tr>
<td>Wednesday</td>
<td>7:00 pm</td>
<td>6 Rho: Proteins, Membranes, Cells II</td>
</tr>
<tr>
<td>Thursday</td>
<td>9:00 am</td>
<td>7 Rab: Proteins, Membranes, Cells</td>
</tr>
<tr>
<td>Thursday</td>
<td>2:00 pm</td>
<td>8 Rab and other GTPases</td>
</tr>
<tr>
<td>Thursday</td>
<td>6:00 pm</td>
<td>Cocktails and Banquet</td>
</tr>
<tr>
<td>Friday</td>
<td>9:00 am</td>
<td>9 Simulations and other GTPases</td>
</tr>
</tbody>
</table>

Oral presentation sessions are located in the Watson Auditorium. Poster session and Chinese Tea & Beer Tasting are in the Poster Hall. Cocktail social hour is held in the Long Hall. Old Suzhou visit departs from the hotel lobby.

Mealtimes and locations are as follows:
- Breakfast: Octagon 7:00am - 9:00am
- Lunch: Suz Garden 12:00pm - 1:30pm
- Supper: Suz Garden 6:00pm - 7:30pm

More information will be available at CSHA office. *(Map at the end of this abstract book)*
MONDAY, September 24—7:00 PM

SESSION 1  RAS: FROM PROTEIN TO MEMBRANE I

Chairperson:  J. Ding, Shanghai Institutes for Biological Sciences, CAS, Shanghai, China

Catalysis of small GTPases by their respective GAP’s
Klaus Gerwert  [25’]
Presenter affiliation: Ruhr-University Bochum, Bochum, Germany; CAS Max Planck Partner Institute (PICB), Shanghai, China.  1

Gibbs energy determinants of lipoprotein insertion into lipid membranes—The case study of Ras proteins
Roland Winter  [25’]
Presenter affiliation: TU Dortmund University, Dortmund, Germany.  2

Computational studies of Ras dynamics, membrane binding and assembly
Alemayehu A. Gorfe  [25’]
Presenter affiliation: University of Texas Medical School in Houston, Houston, Texas.  3

Arl3-specific ciliary targeting of myristoylated cargo by UNC119
Shehab Ismail, Yong Xiang-Chen, Mandy Miertzschke, Ingrid Vetter, Caroline Koemer, Alfred Wittinghofer  [10’]
Presenter affiliation: Max Planck Institute for Molecular Physiology, Dortmund, Germany.  4
SESSION 2  RAS: FROM PROTEIN TO MEMBRANE II

Chairperson:  K. Gerwert, Ruhr-University Bochum / CAS-Max-Planck-Institute, PICB, Shanghai, China

Rho-mDia pathway in the cell, the tissue and the body
Shuh Narumiya  [25']
Presenter affiliation: Kyoto University Graduate School of Medicine, Kyoto, Japan.

Targeting excited states by small molecules—A new strategy for modulating the activity of small GTPases
Hans Robert Kalbitzer, Michael Spoerner, Ina Rosnizeck, Christian Herrmann, Burkhard König  [25']
Presenter affiliation: University of Regensburg, Regensburg, Germany.

Spatiotemporal control of Ras plasma membrane interactions
John F. Hancock, Kwang-Jin Cho, Yong Zhou, Dharini van der Hoeven, Travis Rodkey  [25']
Presenter affiliation: University of Texas Medical School, Houston, Texas.

Fast scouting of K-Ras4B at the plasma membrane of living cells by spot variable fluorescence correlation spectroscopy
Tomasz Trombik, Cyrille Billaudeau, Sébastien Mailfert, Verena Ruprecht, Yoav Henis, stefan Wieser, Didier A. Marquet  [25']
Presenter affiliation: Centre d'Immunologie de Marseille-Luminy, Marseille, France.

Conformational dynamics in different Ras superfamily members as potential fine tuning mechanism for protein activity
Michael Spoerner, Tanja Meierhofer, Ina C. Rosnizeck, Hans Robert Kalbitzer  [10']
Presenter affiliation: Regensburg University, Regensburg, Germany.

vi
SESSION 3 POSTER SESSION

Dimerization of N-Ras at POPC model membranes revealed by ATR-FTIR spectroscopy, FRET measurements and molecular modeling
Peter S. Bachler, Jörn Güldenhaupt, Till H. Rudack, Herbert Waldmann, Carsten Kötting, Klaus Gerwert
Presenter affiliation: Lehrstuhl für Biophysik, Bochum, Germany.

Modeling transient association of proteins with the plasma membrane by spot variation fluorescence correlation spectroscopy
Cyrille Billaudeau, Sébastien Mailfert, Tomasz Trombik, Verena Ruprecht, Stephan Wieser, Didier A. Marguet
Presenter affiliation: Centre d’Immunologie de Marseille-Luminy, Marseille cedex 09, France.

Rab26 mediates selective targeting of synaptic vesicles to the autophagic pathway
Beyenech Binotti, Nathan J. Pavlos, Dirk Wenzel, John JE. Chua, Reinhard Jahn
Presenter affiliation: Max Planck Institute for Biophysical Chemistry, Göttingen, Germany.

Biophysical characterization of the Ras-Nore1-MST1 interaction
Swaantje Brinkmann, Diana Constantinescu, Fabian Klumpers, Christian Herrmann
Presenter affiliation: Ruhr-University Bochum, Bochum, Germany.

Icmt deficiency accelerates the progression of a K-Ras-driven mouse model of pancreatic ductal adenocarcinoma
Helen Court, Michael Hackman, Kyoung Eun Lee, George Miller, Dafna Bar-Sagi, Martin Bergo, Mark R. Philips
Presenter affiliation: NYU School of Medicine, New York, New York.

Modulation of the function of RasGAP by the NF2 tumor suppressor merlin
Yan Cui, Susann Schirmer, Tobias Sperka, Helen Morrison
Presenter affiliation: Leibniz Institute for Age Research - Fritz Lipmann Institute (FLI), Jena, Germany.
Rab9 and retromer regulates recycling of specific luminal protein mediating cell-extracellular matrix interaction required for epithelial tube length control
Bo Dong, Shigeo Hayashi
Presenter affiliation: Riken Center for Developmental Biology, Kobe, Japan.

Asymmetric distribution of phosphatidylserine on the inner leaflet of plasma membrane facilitates Rac1 localization to the leading edge of migrating cells
Jing-Ming Dong, Yuen-Wai Ng, Edward Manser
Presenter affiliation: sGSK Lab, Neuroscience Research Partnership, Singapore.

Melanoma oncogenomics nominates RRAGD as a therapeutic intervention target
Banu Eskiocak, Hailei Zhang, Ian R. Watson, Chang-Jiun Wu, Lynda Chin, Michael A. White
Presenter affiliation: University of Texas Southwestern Medical Center, Dallas, Texas.

The small GTPase Rif triggers formation of actin stress fibre in epithelial cells
Lifei Fan, Stephanie Pellegrin, Harry Mellor
Presenter affiliation: University of Bristol, Bristol, United Kingdom; Inner Mongolia University, Hohhot, China.

The β2-adrenergic receptor—A GEF for Gαs
Yvonne Fretter, Grit Schröter, Jörn Güldenhaupt, Jonas Schartner, Carsten Kötting, Mathias Lübben, Klaus Gerwert
Presenter affiliation: Ruhr-University Bochum, Bochum, Germany.

ATR-FTIR-spectroscopic investigation of membrane-bound Ras
Jörn Güldenhaupt, Gemma Triola, Herbert Waldmann, Carsten Kötting, Klaus Gerwert
Presenter affiliation: Ruhr Universität Bochum, Bochum, Germany.

Site-selective fluorescent labeling of human guanylate protein 1 for quantitative FRET studies
Carola S. Hengstenberg, Thomas O. Peulen, Christian Herrmann, Claus A.M. Seidel
Presenter affiliation: Ruhr-University Bochum, Bochum, Germany.
A survey of host GTPases co-opted by Legionella pneumophila
Andree M. Hubber, Hiroki Nagai
Presenter affiliation: Osaka University, Suita, Osaka, Japan. 23

Biochemical characterization of human guanylate binding protein 2 (hGBP2)
Semra Ince, Adrian Syguda, Christian Herrmann
Presenter affiliation: Ruhr-University Bochum, Bochum, Germany. 24

FTIR-spectroscopic investigations of GTPase-GEF (guanine nucleotide exchange factor) interactions
Sarah Jenrich, Philipp Pinkerneil, Klaus Gerwert, Carsten Kötting
Presenter affiliation: Ruhr-University Bochum, Bochum, Germany. 25

Recombinant farnesylated Ras homolog enriched in brain (Rheb) studied by multidimensional NMR spectroscopy in solution
Katharina Jockers, Raphael Stoll
Presenter affiliation: Ruhr-University Bochum, Bochum, Germany. 26

Revealing conformational substates of lipidated N-Ras protein by pressure modulation
Shobhna Kapoor, Herbert Waldmann, Roland Winter
Presenter affiliation: Technische Universität Dortmund, Dortmund, Germany. 27

Ras-related small GTPases, Rap1 and RhoA collectively induce the phagocytosis of serum-opsonized zymosan particles in macrophage
Jae-Gyu Kim, Mi-Young Moon, Hee-Jun Kim, Yi Li, Dong-Keun Song, Jun-Sub Kim, Jae-Yong Lee, Jaebong Kim, Sung-Chan Kim, Jae-Bong Park
Presenter affiliation: Hallym University, Chuncheon, South Korea. 28

Biophysical characterization of the Ras-Nore1-MST1 interaction
Swaantje Brinkmann, Diana Constantinescu, Fabian Klumpers, Christian Herrmann
Presenter affiliation: Ruhr-University Bochum, Bochum, Germany. 29

Rab35 regulates Arf6 activity through centaurin β2/ACAP2 during neurite outgrowth—A novel cross-talk between Rab and Arf
Hotaka Kobayashi, Mitsunori Fukuda
Presenter affiliation: Graduate School of Life Sciences, Tohoku University, Sendai, Miyagi, Japan. 30
Regulation of border cell migration by a G-protein signaling protein
Sujung Lee, Jeongsil Kim-Ha
Presenter affiliation: Sejong University, Seoul, South Korea.

MicroRNA-708 regulates ovarian cancer cell migration/invasion via modulation of Rap1B
Kai-Ti Lin, Yu-Ming Yeh, Lu-Hai Wang
Presenter affiliation: National Health Research Institutes, Miaoli County, Taiwan.

Biophysical investigations on the GαS subunit of heterotrimeric G proteins
Daniel Mann, Till Rudack, Grit Schröter, Steffen Wolf, Carsten Kötting, Klaus Gerwert
Presenter affiliation: Ruhr University, Bochum, Germany.

Small GTPase Rab12 regulates constitutive degradation of transferrin receptor
Takahide Matsui, Takashi Itoh, Mitsunori Fukuda
Presenter affiliation: Tohoku University, Sendai, Miyagi, Japan.

The Rac activator Tiam1 is regulated by aPKC phosphorylation
Kenji Matsuzawa, Takashi Watanabe, Shujie Wang, Toshinori Matsui, Mai Kakeno, Kozo Kaibuchi
Presenter affiliation: Nagoya University Graduate School of Medicine, Nagoya, Japan.

GTPase of immune associated protein (Gimap5 -/-) gene predisposes to diabetes and gastrointestinal diseases in bio-breeding (BB) rats
Daniel H. Moralejo, Williams Osborne, Ake Lernmark
Presenter affiliation: Keeling Center for Comparative Medicine and Research, University of Texas, MD Anderson Cancer Center, Bastrop, Texas.

Reversible adenylylation of Rab proteins
Matthias P. Mueller, Roger S. Goody, Aymelt Itzen
Presenter affiliation: MPI of Molecular Physiology, Dortmund, Germany.

ATR-FTIR spectroscopic investigations of immobilized proteins
Philipp Pinkerneil, Jörn Gülデンhaupt, Klaus Gerwert, Carsten Kötting
Presenter affiliation: Ruhr-University Bochum, Bochum, Germany.
Ras homolog enriched in brain (Rheb) enhances apoptosis—A cellular and structural approach
Veena Nambiar Potheraveedu, Christoph G. Goemans, Sascha Karassek, Katharina Jockers, Raphael Stoll, Rolf Heumann
Presenter affiliation: Ruhr University of Bochum, Bochum, Germany.

Roles of mDia, a Rho effector and actin nucleator, in developing nervous system
Dean Thumkeo, Ryota Shinohara, Shuh Narumiya
Presenter affiliation: Kyoto University Faculty of Medicine, Sakyo-ku, Kyoto, Japan.

QM/MM pathway calculations on the hydrolysis mechanism of GTP in Ras
Steffen Wolf, Till Rudack, Wenjin Li, Jürgen Schlitter, Frauke Gräter, Carsten Kötting, Klaus Gerwert
Presenter affiliation: PICB Shanghai, Shanghai, China; Ruhr-University Bochum, Bochum, Germany.

Cytotoxic necrotizing factor-Y increases Yersinia effector translocation by irreversibly activating Rac
Manuel Wolters, Erin C. Boyle, Julia Schwab, Martin Aepfelbacher
Presenter affiliation: University Medical Center Hamburg-Eppendorf, Germany.

Rab GTPases essential for development and pathogenesis of Magnaporthe oryzae
Dongmei Zhang, Shuyang Liu, Guangpu Li, Guodong Lu, Zonghua Wang, Jie Zhou
Presenter affiliation: Fujian Agriculture and Forestry University, Fuzhou, China.

Plasma membrane depolarization alters K-ras-specific nanocluster spatiotemporal dynamics
Yong Zhou, Jialie Luo, Hongzhen Hu, John F. Hancock
Presenter affiliation: University of Texas Medical School, Houston, Texas.
SESSION 4    RAS: INTRACELLULAR PROCESSES

Chairperson:   S. Narumiya, Kyoto University, Kyoto, Japan

The RA and PH domains of RIAM Act as a proximity detector for Rap1 and PI(4,5)P2
Joseph Wynne, Jinhua Wu, Wenjuan Su, Stevan R. Hubbard, Mark R. Philips  [25']
Presenter affiliation: NYU School of Medicine, New York, New York.  45

Small GTPase in metabolic control—A tale of GAP and GEF for Ral
Xiao-Wei Chen  [25']
Presenter affiliation: University of Michigan, Ann Arbor, Michigan.  46

Coordination of cellular growth and self-renewal programs by Ras-like GTPases and the exocyst
Brian Bodemann, Yi-Hung Ou, Jonathan Cooper, Michael White  [25']
Presenter affiliation: UT Southwestern Medical Center, Dallas, Texas.  47

Therapeutic strategies for targeting aberrant Ras and Rho small GTPase signaling for cancer treatment
Channing J. Der  [25']
Presenter affiliation: University of North Carolina at Chapel Hill, Chapel Hill, North Carolina.  48

SESSION 5    RHO: PROTEINS, MEMBRANES, CELLS I

Chairperson:   R. Goody, Max Planck Institute, Dortmund, Germany

Ras chaperons for cancer therapy
Yoel Kloog  [25']
Presenter affiliation: Tel Aviv University, Tel Aviv, Israel.  49
Ego3 functions as a homodimer to mediate the interaction between Gtr1-Gtr2 and Ego1 within the TORC1 activatory EGO complex
Tianlong Zhang, Marie-Pierre Péli-Gulli, Hui Yang, Claudio De Virgilio, Jianping Ding [25']
Presenter affiliation: Institute of Biochemistry and Cell Biology, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, Shanghai, China. 50

Structural insight into the Rag GTPase mediated mTOR complex 1 activation
Rui Gong, Li Li, Yi Liu, Ping Wang, Huirong Yang, Ling Wang, Jingdong Cheng, Kun-Liang Guan, Yanhui Xu [25']
Presenter affiliation: Fudan University, Shanghai, China. 51

Cdc42 dynamics explains the emergence of septin ring in budding yeast
Andrew B. Goryachev [25']
Presenter affiliation: University of Edinburgh, Edinburgh, United Kingdom. 52

The Guanine Nucleotide Exchange Factor Vav3 regulates glial progenitor differentiation in response to the neural stem cell niche environment
Stefanie Hahn, Veronika Luft, Sören Moritz, Masabumi Shibuya, Jacqueline Reinhard, Klaus D. Fischer, Alexander von Holst, Andreas Faissner [10']
Presenter affiliation: Ruhr-University, Bochum, Germany. 53

WEDNESDAY, September 26—7:00 PM

SESSION 6  RHO: PROTEINS, MEMBRANES, CELLS II

Chairperson: M. Fukuda, Tohoku University, Miyagi, Japan

Rho GTPases as targets of bacterial protein toxins
Klaus Aktories [25']
Presenter affiliation: University of Freiburg, Freiburg, Germany. 54

Liprin-α suppresses Rho-mDia mediated stress fiber formation
Toshimasa Ishitake, Satoko Sakamoto [25']
Presenter affiliation: Kyoto University Faculty of Medicine, Kyoto, Japan. 55
Regulation and signaling of plexin—A tale of two dimers and two small GTPases
Xuewu Zhang, Yuxiao Wang, Huawei He, Nishi Srivastava, Christopher W. Cowan [25’]
Presenter affiliation: UT Southwestern Medical Center, Dallas, Texas. 56

PAKs have different modes of kinase activation
Yohendran Baskaran, Yuen-Wai Ng, Jing-Ming Dong, Ed Manser [25’]
Presenter affiliation: sGSK Group, Singapore. 57

THURSDAY, September 27—9:00 AM

SESSION 7 RAB: PROTEINS, MEMBRANES, CELLS

Chairperson: K. Aktories, University of Freiburg, Freiburg, Germany

The structural and mechanistic basis for Rab cycling and targeting
Roger S. Goody [25’]
Presenter affiliation: Max-Planck Institute for Molecular Physiology, Dortmund, Germany. 58

Structural insights into mechanisms for acceleration of GTP hydrolysis by Rab GAPs from host and pathogen perspectives
Ashwini Mishra, Mike Irwin, Andrew Malaby, Craig Roy, David Lambright [25’]
Presenter affiliation: UMASS Medical School, Worcester, Massachusetts. 59

Structurally distinct bacterial TBC-like GAPs link Arf GTPase to Rab1 inactivation to counteract host defenses
Yongqun Zhu [10’]
Presenter affiliation: Life Sciences Institute, Zhejiang University, Hangzhou, China. 60

The Rab family small GTPases regulate membrane trafficking in melanocytes
Mitsunori Fukuda [25’]
Presenter affiliation: Tohoku University, Graduate School of Life Sciences, Sendai, Japan. 61
Mechanistic studies of the Ras-superfamily by time-resolved FTIR spectroscopy
Carsten Kötting, Klaus Gerwert [10']
Presenter affiliation: Ruhr-University Bochum, Bochum, Germany. 62

THURSDAY, September 27—2:00 PM

SESSION 8 RAB AND OTHER GTPases
Chairperson: D. Lambricht, University of Massachusetts Medical School, Worcester, Massachusetts, USA

Rab10 controls biogenesis of plasmalemmal precursor vesicles and asymmetric membrane addition during neuronal polarization
Yang Liu, Xiao-Hui Xu, Tong Wang, Cai-Yun Deng, Jiu-Lin Du, Zhen-Ge Luo [25']
Presenter affiliation: Chinese Academy of Sciences, Shanghai, China. 63

Rab GTPases function coordinately to regulate phagosome maturation in C. elegans
Pengfei Guo, Jianhua Yin, Yanwei Wu, Jiming Liu, Shiya Cheng, Xiaochen Wang [25']
Presenter affiliation: National Institute of Biological Sciences, Beijing, China. 64

Elucidation of Rab GTPase membrane targeting using chemical probes
Yaowen Wu [10']
Presenter affiliation: Max Planck Institute of Molecular Physiology, Dortmund, Germany. 65

Spatio-temporal regulation of GTP exchange and hydrolysis of Arf1p at the late-Golgi
Kuan-Yu Chen, Pei-Chin Tsai, Ya-Wen Liu, Fang-Jen S. Lee [25']
Presenter affiliation: National Taiwan University, Taipei, Taiwan. 66

Discovery of chemical probes targeting leukemia associated Rho GEF by NMR fragment screening
Rongsheng MA, Jia GAO, Jihui Wu, Yunyu Shi, Ke Ruan [10']
Presenter affiliation: University of Science and Technology of China, Hefei, Anhui, China. 67
Structural and functional analysis of the calmodulin-binding domain of Rac1 GTPase
Bing Xu, Prashen Chelikani, Rajinder P. Bhullar  [10']
Presenter affiliation: University of Manitoba, Winnipeg, Canada.  68

Rho signaling and cardiomyopathy
Xiangsheng Yang, Jiang Chang  [10']
Presenter affiliation: Texas A&M Health Science Center-IBT, Houston, Texas.  69

Rab22 essential for biogenesis of NGF signaling endosomes
Liang Wang, Guangpu Li  [10']
Presenter affiliation: University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma; Fujian A & F University, Fuzhou, China.  70

Rab5 signaling pathway in fission yeast cells
Masaaki Miyamoto, Yuta Tsukamoto, Chisako Katayama, Takuya Goto  [10']
Presenter affiliation: Kobe University, Kobe, Japan.  71

Rab7-dependent microautophagy in gastrulating mouse embryo
Yoh Wada, Nobuyuki Kawamura, Ge-Hong Sun-Wada, Akihiro Harada, Shunsuke Takasuga, Takehiko Sasaki, Mirako Aoyama  [10']
Presenter affiliation: Osaka University, Ibaraki, Japan.  72

THURSDAY, September 27—6:00 PM
COCKTAILS and BANQUET

FRIDAY, September 28—9:00 AM

SESSION 9  SIMULATIONS AND OTHER GTPases

Chairperson: K. Gerwert, Ruhr-University Bochum / CAS-Max-Planck-Institute, PICB, Shanghai, China

The nature of the activation of GTPases—Simulating the allostERIC action of G-proteins
Arieh Warshel  [25']
Presenter affiliation: University of Southern California, Los Angeles, California.  73
Modeling chemical steps of enzymatic hydrolysis of GTP
Alexander Nemukhin, Bella Grigorenko  [25]
Presenter affiliation: M.V. Lomonosov Moscow State University,
Moscow, Russia; Russian Academy of Sciences, Moscow, Russia.  74

Ras and GAP drive the geometry and charge of GTP into a
precatalytic state as revealed by combining FTIR and QM/MM
simulations
Till Rudack, Fei Xia, Jürgen Schlitter, Carsten Kötting, Klaus Gerwert
[10]
Presenter affiliation: Ruhr-University Bochum, Bochum, Germany.  75

Nucleotide hydrolysis triggers major structural changes in human
guanylate binding protein 1 (hGBP1)
Christian Herrmann  [25]
Presenter affiliation: Ruhr University Bochum, Bochum, Germany.  76

Regulation of Son of sevenless by the membrane-actin linker
protein ezrin
Katja J. Geissler, Tobias Sperka, Reinhard Seifert, Sebastian Peuker,
Peter Herrlich, Helen Morrison  [10’]
Presenter affiliation: Leibniz Institute of Age Research, Fritz Lipmann
Institute (FLI), Jena, Germany.  77

Genetic deletion of Rala and Rab small GTPases reveals
redundant functions in development and tumorigenesis
Pascal Peschard, Afshan McCarthy, Valerie Leblanc-Dominguez,
Maggie Yeo, Sabrina Guichard, Christopher J. Marshall  [10’]
Presenter affiliation: Institute of Cancer Research, London, United
Kingdom.  78