Join us for our tenth anniversary

EIBSEE 10

THE TENTH EIBSEE MEETING ON

CELLULAR MECHANISMS OF NEURODEGENERATION

OKTOBER 27 – 30, 2010

guest speakers:

J. Collinge (National Hospital, London)
M. Cookson (NIH, Bethesda)
G. Donmez (MIT, Cambridge)
C. Glabe (University of California, Irvine)
D. Harris (Boston University)
L. Ittner (University of Sydney)
M. Neumann (University of Zurich)
L. Rajendran (University of Zurich)
C. Shaw (King´s College, London)
P. St. George-Hyslop (University of Toronto)
C. Van Broeckhoven (VIB, University of Antwerp)

organized by:

Christian Haass (DZNE & University of Munich)

Hans und Ilse Breuer Stiftung
ALZHEIMER FORSCHUNG UND HILFE

SFB 596
TUM HZM LMU MPI

Deutsche Forschungsgemeinschaft
DFG

DZNE
Deutsches Zentrum für Neurodegenerative Erkrankungen in der Helmholtz-Gemeinschaft

CIPSM
CENTER FOR INTEGRATED PROTEIN SCIENCE MUNICH

Roche

The tenth Eibsee Meeting
(October 27 – 30, 2010)

"CELLULAR MECHANISMS OF NEURODEGENERATION"

funded by the SFB596 (DFG)
&
The Hans und Ilse Breuer Foundation

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organized by:
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Location

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www.eibsee-hotel.de

Travelling

by train: take the train to Garmisch (via Munich). In Garmisch please take a cab to the hotel (about 15-20 min drive).

by plane: from Munich airport take the S-Bahn to Munich Central station. At the central station take the train to Garmisch (about 1 hr); from here take a cab to the hotel.

by car: from Munich take the highway to Garmisch. In Garmisch follow the signs to Eibsee. The hotel is at the end of the road right at the foot of the Zugspitze.

Weather

It's fall and it may be cold already. For those who like to go on a walk: please bring your hiking boots.

Acknowledgements

We greatly appreciate funding of the Eibsee Meeting by the Hans and Ilse Breuer foundation. We thank our additional sponsors Center for Integrated Protein Science Munich (CIPSM) and F. Hoffmann La-Roche AG for their generous financial support.

PROGRAM

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Wednesday, October 27

Arrival, Hiking, Opening Lecture

15:00 The traditional "Scientific walk" around the lake (if weather permits)

17:00 – 17:15 **Welcome (**Christian Haass)

17:15 – 18:15 **Key Note Lecture**

C. Van Broeckhoven, VIB, University of Antwerp, Belgium
Progranulin-associated neurodegeneration:
New insights in Frontotemporal dementia and related disorders

18:15 – 18:45 **Announcement of the Hans and Ilse Breuer Award 2011** (Christian Haass)

19:30 Surprise Dinner

Thursday, October 28

9:00 – 10:15 **Cellular mechanisms of Frontotemporal lobar dementia I**
Chair: E. Mandelkow
Invited speakers

9:00 – 9:25 C. Shaw, King´s College, London
FUS/TLS, ALS and FTD; insights from genetics and pathobiology

9:25 – 9:50 M. Neumann, University of Zurich, Switzerland
TDP-43 and FUS - new insights into pathomechanisms of Frontotemporal dementia and Amyotrophic lateral sclerosis

9:50 – 10:15 L. Ittner, University of Sydney, Australia
The role of tau in excitotoxic signaling

10:15 – 10:55 Coffee Break/Poster Session

10:55 – 12:10 **Cellular mechanisms of Frontotemporal lobar dementia II**
Chair: L. Bertram
Short talks

10:55 – 11:10 B. Schmid, DZNE Munich, Germany
Fishing for TARDBP function

11:10 – 11:25 P. Kahle, DZNE & University of Tübingen, Germany
Target RNAs of TDP-43

11:25 – 11:40 D. Dormann, DZNE & University of Munich, Germany
ALS-associated FUS mutations disrupt transportin-mediated nuclear import

11:40 – 11:55 R. Brandt, University of Osnabrück, Germany
Pathways mediating spine pathology and tau toxicity in Alzheimer´s disease models

11:55 – 12:10 E.M. Mandelkow, Max-Planck ASMB Hamburg & DZNE Bonn, Germany
Tau conformations and modes of toxicity

12:30 – 13:30 Lunch

13:30 – 15:30 Time for recreation (hiking, swimming, sauna)

15:30 – 16:50 Alzheimer´s disease: Cellular mechanisms of amyloid ß-peptide generation I
Chair: U. Müller
Invited speakers
15:30 – 15:55 P. St. George-Hyslop, University of Toronto, Canada
Genetics and molecular biology of Alzheimer´s disease

15:55 – 16:20 *Hans and Ilse Breuer Special Award Winner 2010:*
L. Rajendran, University of Zurich, Switzerland
The cellular complexity underlying Alzheimer´s disease

Short talks
16:20 – 16:35 S. Lichtenthaler, DZNE Munich, Germany
Modulation of APP α-secretase cleavage

16:35 – 16:50 H. Steiner, DZNE & University of Munich, Germany
Intramembrane proteolysis by γ-secretase

16:50 – 17:30 Coffee Break/Poster Session

17:30 – 18:30 Alzheimer´s disease: Cellular mechanisms of amyloid ß-peptide generation II
Chair: S. Lichtenthaler
17:30 – 17:45 V. Doetsch, University of Frankfurt, Germany
Structural characterization of the C-terminal domain of presenilin 1

17:45 – 18:00 C. Kaether, Leibniz Institute for Age Research, Jena, Germany
Assembly and transport of γ-secretase

18:00 – 18:15 G. Multhaup, Free University of Berlin, Germany
Abeta: possible roles in health and disease

18:15 – 18:30 J. Walter, University of Bonn, Germany
Regulation of extracellular Aß metabolism by membrane lipids

18:30 – 18:45 Scientific presentation of the 2011 Hans and Ilse Breuer Award winner
Chair: C. Haass
18:30 – 18:45 Speaker to be announced

19:00 Dinner

Friday, October 29

9:00 – 10:45 Alzheimer´s disease: Neuronal function & dysfunction, aggregation and therapy
Chair: M. Meyer-Luehmann
Invited speakers
9:00 – 9:25 *Hans and Ilse Breuer Special Award Winner 2010:*
Lars Bertram, Max-Planck Institute for Molecular Genetics, Berlin, Germany
The role of CLU, CR1, and PICALM on Alzheimer's disease risk and CSF biomarker levels

9:25 – 9:50 C. Glabe, University of California, Irvine, USA
Conformational and structural diversity of amyloid Aß aggregates

9:50 – 10:15 G. Donmez, Massachusetts Institute of Technology, Cambridge, USA
The role of SIRT1 in neurodegenerative diseases

Short talks
10:15 – 10:30 J. Herms, University of Munich, Germany
Kinetics of beta-amyloid plaque formation and growth

10:30 – 10:45 U. Müller, University of Heidelberg, Germany
Functions of APP and APLP2 in the peripheral and central nervous system

10:45 – 11:25 Coffee Break/Poster Session

11:25 – 12:20 Cellular mechanisms of Parkinson´s disease I
Chair: R. Klein
Invited speaker
11:25 – 11:50 M. Cookson, NIH, Bethesda, USA
α-Synuclein and LRRK2; an emerging pathway in familial and sporadic Parkinson's disease

Short talks
11:50 – 12:05 T. Gasser, DZNE & University of Tübingen, Germany
Genetics of Parkinson´s Disease

12:05 – 12:20 K. Winklhofer, DZNE & University of Munich, Germany
Parkin: a stress-responsive and stress protective protein linked to Parkinson's disease

12:30 – 13:30 Lunch

13:30 – 15:00 Time for recreation (hiking, swimming, sauna)

15:00 - 15:45 Cellular mechanisms of Parkinson´s disease II
Chair: K. Winklhofer
Short talks
15:00 – 15:15 W. Springer, DZNE & University of Tübingen, Germany
Parkinson´s Disease – linking ubiquitin to damaged mitochondria for selective autophagy

15:15 – 15:30 F. Kamp, DZNE & University of Munich, Germany
α-Synuclein inhibits mitochondrial fusion

15:30 – 15:45 R. Klein, MPI of Neurobiology, Munich, Germany
Pro-survival role for Parkinon´s associated gene DJ-1 in dopaminergic neurons

15:45 – 16:35 Cell biology of prion disorders I
Chair: H. Schätzl
Invited speaker
15:45 – 16:10 J. Collinge, National Hospital for Neurology & Neurosurgery, London, UK
The molecular pathology of kuru, the archetypal transmissible neurodegenerative disease, and its wider lessons

16:10 – 16:35 D. Harris, Boston University School of Medicine, USA
Functional activities of the prion protein

16:35 – 17:15 Coffee Break/Poster Session

17:15 – 18:00 Cell biology of prion disorders II
Chair: H. Steiner
Short talks
17:15 – 17:30 J. Tatzelt, DZNE & University of Munich, Germany
The cellular prion protein as a mediator of neurotoxic signaling

17:30 – 17:45 H. Schätzl, Technical University of Munich & University of Wyoming, Laramie, USA
Modulated autophagy and its impact on persistent and primary prion infection

17:45 – 18:00 I. Vorberg, DZNE Bonn, Germany
Infectious protein aggregates in the mammalian cytosol

18:30 Dinner

Saturday, October 30

Departure

The tenth Eibsee Meeting on Cellular Mechanisms of Alzheimer´s Disease, October 27-30, 2010

Poster Session

Topic 1: Amyotrophic lateral sclerosis (ALS) and Frontotemporal lobar dementia (FTLD): Thursday, October 28, 2010

No. 1*: Eva Bentmann et al., DZNE & University of Munich:* ALS-associated FUS mutations disrupt transportin-mediated nuclear import

No. 2: *Carola Stribl et al., Helmholtz Center Munich:* Generation of a mouse model for FTLD and ALS

Topic 2: APP processing and function: Thursday, October 28, 2010

No. 3: *Veit Althoff (Breuer Stipend) et al., Free University of Berlin:* Purification and characterization of APP C100 FAD mutants and cystein-linked APP dimers

No. 4: *Susanne Bürger (Breuer Stipend) et al., University of Leipzig:* Inhibition of VEGF signaling differentially alters processing of APP in primary cultured neurons, astrocytes and endothelial cells

No. 5: *Peer-Hendrik Kuhn et al., DZNE & University of Munich:* ADAM10 is the physiologically relevant, constitutive alpha-secretase of the amyloid precursor protein in primary neurons

No. 6: *Daniel Fleck (Breuer Stipend) et al., DZNE & University of Munich:* Investigation of Bace1 expression and localization in health and Alzheimer's disease

No. 7: *Akio Fukumori et al., DZNE & University of Munich:* Three-amino acid spacing of presenilin endoproteolysis suggests a general stepwise cleavage of gamma-secretase-mediated intra-membrane proteolysis

Topic 3: Aggregation and toxicity: Thursday, October 28, 2010

No. 8: *Jens Moreth[1], Katja Kroker[1], Daniel Schwanzar[2], Lothar Kussmaul[1], Boehringer Ingelheim Pharma GmbH & Co KG[1], Biberach and University Hospital - Experimental Neurology[2], Ulm:* Aß aggregates bind to neurons and affect neurotransmission by different ways

No. 9: *Hans Zempel, Edda Thies, Eckhard Mandelkow, Eva-Maria Mandelkow, MPI for Struct. Mol. Biol., Hamburg & DZNE Bonn:* Abeta oligomers cause localized Ca++ elevation, missorting of endogenous tau into dendrites, tau phosphorylation, and destruction of microtubules and spines

No. 10: *Christian Jung et al., University of Munich:* The role of presenilin1 in dendritic spine plasticity

No. 11: *Nambirajan Govindarajan (Breuer Stipend) et al., European Neuroscience Institute, Göttingen:* Loss of HDAC6 attenuates the pathogenesis of Alzheimer´s Disease

No. 12: *Gwendolyn Behrendt et al., University of Munich:* The role of myelin repair and stem cell dedifferentiation in Alzheimer`s disease in mice and men

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Topic 4: Therapeutic targets: Friday, October 29, 2010

No. 13: *Frauke van Bebber et al., DZNE & University of Munich:* Zebrafish BACE1 knock-down phenotype provides an *in vivo* assay for BACE inhibitor development

No. 14: *Sabine Liebscher et al., DZNE & University of Munich:* Effects of chronic γ-secretase inhibition in an APP/PS1 transgenic mouse model of Alzheimer's Disease

No. 15: *Benedikt Kretner, Richard Page et al., DZNE & University of Munich:* Pharmacological modulation of gamma-secretase

Topic 5: Parkinson´s disease and prion disorders: Friday, October 29, 2010

No. 16: *Nicole Exner et al., DZNE & University of Munich:* Alpha-synuclein inhibits membrane fusion

No. 17*: Pontus Klein et al., MPI of Neurobiology, Munich:* Functional interactions of GDNF/Ret signaling and Parkinson-associated genes parkin and pink1

No. 18: *Barbara Solchenberger et al., DZNE & University of Munich:* Biochemical and phenotypical characterization of alpha-synuclein transgenic zebrafish

No. 19: *Petra Frick et al., University of Munich:* Protein misfolding cyclic amplification as a tool to characterize sporadic Creutzfeldt-Jakob disease strains and their transmission properties

No. 20: *Julia Hofmann et al., DZNE Bonn:* Natural transmission of cytosolic prions within mammalian cell populations

No. 21: *Ulrike Resenberger et al., DZNE & University of Munich:* Cellular prion protein mediates toxic signaling of Aß oligomers