

Molecular Neurodegeneration

Conference Program

Day One: Tuesday 10th September 2013

10:00-13:00 Arrival and registration

13:00 Welcome remarks by the organizers

Guojun Bu, Organizer, Co-Editor-in-Chief, *Molecular Neurodegeneration*
Frederic Checler, Local Organizer

13:10-15:20 **Session 1: Genetics of neurodegeneration**, Chairperson: **Rudolph Tanzi**

Decoding Alzheimer's in the age of genome-wide analyses

Rudolph Tanzi, Massachusetts General Hospital & Harvard Medical School, Boston, USA

The structural biology of the human presenilin complex

Peter St. George-Hyslop, University of Cambridge, UK & University of Toronto, Canada

Functional genetics – An approach to mechanisms in Alzheimer's disease

Mikko Hiltunen, University of Eastern Finland, Kuopio, Finland

Role of APP in neuronal function

Hui Zheng, Baylor College of Medicine, Houston, USA

15:20-15:50 Coffee break

15:50-18:00 **Session 2: β -Secretase**, Chairperson: **Christian Haas**

The biological function of β -secretase

Christian Haas, Ludwig Maximilians University Munich & German Center for Neurodegenerative Diseases (DZNE), Germany

Proteomics in neurons and animals: Substrates and therapeutic potential of α - and β -secretase

Stefan Lichtenthaler, German Center for Neurodegenerative Diseases (DZNE) & Technische Universitaet Muenchen, Germany

BACE1, the Alzheimer's β -secretase enzyme, in health and disease

Robert Vassar, Northwestern University, Chicago, USA

Regulation of dynamic BACE1 trafficking in neurons

Gopal Thinakaran, University of Chicago, USA

18:00–20:00 **Poster Session 1 & Welcome Reception**

Day Two: Wednesday 11th September 2013

8:30-10:10 **Session 3: γ -Secretase**, Chairperson: **Sangram S Sisodia**

Presenilin function in health and disease
Sangram S Sisodia, The University of Chicago, USA

Endogenous and exogenous regulation of γ -secretase
Yueming Li, Memorial Sloan-Kettering Cancer Center, New York, USA

Function and dysfunction of presenilin1 in Alzheimer's disease
Jie Shen, Harvard Medical School, Boston, USA

10:10-10:40 Coffee break

10:40-12:50 **Session 4: Chair presentation and short talks 1**, Chairperson: **John Hardy**

Genetic analysis of neurodegeneration... the end game
John Hardy, UCL Institute of Neurology, London, UK

Selected talk - Regulation of mitochondrial function by PINK1, Parkin and DJ-1
Emilie Giaime, Harvard Medical School, Boston, USA

Selected talk -Expanded G4C2 repeats linked to *C9ORF72* ALS and FTD form length-dependent RNA foci, sequester RNA binding proteins and are neurotoxic
Christopher E Shaw, King's College, London, UK

Selected talk -In situ studies of protein aggregation kinetics with multiparametric and superresolution imaging
Gabriele Kaminski Schierle, University of Cambridge, Cambridge, UK

Selected talk -Designing nanoparticles for delivery of neurotrophic proteins
Angelina Angelova, Institut Galien Paris-Sud, France

Selected talk -Novel non-carbohydrate O-GlcNAcase inhibitors with CNS drug properties as potential treatment for Alzheimer's disease and tauopathies
Dirk Beher, Asceneuron SA, Lausanne, Switzerland

Selected talk -Super-resolution fluorescence imaging of intracellular mutant huntingtin protein reveals a population of fibrillar aggregates co-existing with compact perinuclear inclusion bodies
Steffen J Sahl, Stanford University, California, USA

12:50-14:00 Lunch

14:00-15:40 **Session 5: Novel pathological insights**, Chairperson: **Don W Cleveland**

From Charcot to today: engineering therapies for ALS, FTD and beyond
Don W Cleveland, Ludwig Institute & University of California, San Diego, USA

Vascular hypothesis of Alzheimer's disease: role of apoE and apoE receptors
Guojun Bu, Mayo Clinic, Jacksonville, Florida, USA

Prion-like aspects of cerebral amyloidosis

Mathias Jucker, University of Tübingen & German Center for Neurodegenerative Diseases (DZNE), Germany

15:40-16:10 Coffee break

16:10-17:50 **Session 6: Novel mechanistic insights**, Chairperson: **Bart De Strooper**

Micro-RNA changes in sporadic Alzheimer's disease

Bart De Strooper, VIB Center for the Biology of Disease & KU Leuven, Belgium

A novel mechanism underlying pathogenesis of Down syndrome

Huaxi Xu, Sanford-Burnham Medical Research Institute, La Jolla, California, USA

The transcription factor XBP-1 in neurodegenerative diseases

Frédéric Checler, Université de Nice-Sophia-Antipolis, France

17:50-19:40 **Poster Session 2**

20:00-22:00 **Conference banquet**

Day Three: Thursday 12th September 2013

8:30-10:40 **Session 7: Toxic mechanism of neurodegeneration**, Chairperson: **Virginia M Lee**

Transmission of α -synuclein in Parkinson's disease

Virginia M Lee, University of Pennsylvania, Philadelphia, USA

Mechanisms of A β induced synaptic toxicity

Edward Koo, University of California, San Diego, USA

Tau protein-from native unfolding to pathological folding

Eckhard Mandelkow, German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany

Tau toxicity and rescue in animal models of tau pathology

Eva Mandelkow, German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany

10:40-11:10 Coffee break

11:10-13:00 **Session 8: Short talks 2**

Selected talk -A novel link between clusterin, tau and neurodegeneration in Alzheimer's disease

Celina Zerbinatti, Merck Sharp & Dohme Inc., West Point, Pennsylvania, USA

Selected talk -Genetic modulation of soluble A β rescues cognitive and synaptic impairment in a mouse model of AD

Joanna Jankowsky, Baylor College of Medicine, Houston, Texas, USA

Selected talk -Plasma signaling proteome profiling and integrative systems analysis for the discovery of pathological pathways in Alzheimer's disease

Philipp A Jaeger, Stanford University School of Medicine, USA & Free University Berlin, Germany

Selected talk -Excitotoxicity increases the release of 24S-hydroxycholesterol via CYP46A1 activation

Alejandro Soder, Université Catholique de Louvain, Brussels, Belgium

Selected talk -Identifying dominant modifiers of mutant FUS toxicity *in vivo*

Udai Pandey, Louisiana State University Health Sciences Center, New Orleans, USA

Selected talk -N-Terminal truncated amyloid β -peptide in Alzheimer's disease

Rong Wang, Icahn School of Medicine at Mount Sinai, New York, USA

Sponsored Talk - Streamlining your workflow: how to get more out of your research

Christine Buske, PhD, Papers Marketing Manager, Springer Science+Business Media

13:00-14:10 Lunch

14:10-15:50 **Session 9: Therapy**, Chairperson: **David M Holtzman**

Potential role of extracellular tau in development and spread of tauopathy: effects of anti-tau antibodies

David M Holtzman, Washington University, St. Louis, USA

Harnessing endogenous pathways and metabolites to treat or prevent neurodegenerative disease

Todd E Golde, University of Florida, Gainesville, USA

Tau focused therapy and tau transmission: Implications for Alzheimer's disease and related tauopathies

John Q Trojanowski, University of Pennsylvania, Philadelphia, USA

15:50 Closing remarks