



Barcelona BioMed Conference

Amyloid- β and Alzheimers disease: From Fundamental Principles to Therapeutic Strategies

July 9-11, 2014

Programme

Wednesday, July 9

8.00 Registration

9.00 Welcome by Joan J. Guinovart, IRB Barcelona Director

Introduction

Chair: Natàlia Carulla

9:15 The molecular nature and significance of Alzheimer's disease
Christopher M. Dobson, University of Cambridge (Cambridge, UK)

Session I: A β production, transport and clearance

Chair: Bruce L. Kagan

9.50 Can we predict who will get Alzheimer's disease? Teresa Gómez-Isla,
MassGeneral Institute for Neurodegenerative diseases (Boston, MA, USA)

10.25 Selected abstract: Fine mapping and functional characterization of genome-
wide association study-identified loci for Alzheimer's disease Agustín Ruiz,
Memory Clinic of Fundació ACE (Barcelona, Spain)

10.40 Supersaturated proteins in Alzheimer's disease Michele Vendruscolo,
University of Cambridge (Cambridge, UK)

11.15 Coffee break and poster session

Session II: A β production, transport and clearance

Chair: Kevin J. Barnham

11.45 Can production of amyloid-beta be reduced by targeting partitioning of the amyloid precursor C99 protein into raft-like membrane domains? Charles R. Sanders, Vanderbilt University (Nashville, TN, USA)

12.20 SELECTED ABSTRACT: Secreted-Frizzled-Related-Protein 1 contributes to AD pathogenesis Pilar Esteve, Centro de Biología Molecular Severo Ochoa (Madrid, Spain)

12.35 ApoE and apoE receptors in brain A β clearance and Alzheimer's disease Guojun Bu, Mayo Clinic (Jacksonville, FL, USA)

13.10 Lunch (FrescCo, C/Carme, 16)

Session III: A β aggregation

Chair: Dominic M. Walsh

15.00 Biophysical approaches for probing protein aggregation Tuomas Knowles, University of Cambridge (Cambridge, UK)

15.35 Amyloid B peptide aggregation mechanism - role of extrinsic and intrinsic factors Sara Linse, Lund University (Lund, Sweden)

16.10 SELECTED ABSTRACT: Structurally discrete protofibrils formed during AB40 and AB42 fibrillization correlate with neuronal cell death Bernat Serra-Vidal, IRB Barcelona (Barcelona, Spain)

16.25 Coffee break and poster session

16.55 Peptide dimer structure in A β fibrils visualized with High- Resolution Cryo-EM Marcus Fändrich, Institute for Pharmaceutical Biotechnology (Ulm, Germany)

17.30 A β seeds Mathias Jucker, University of Tübingen and German Center for Neurodegenerative Diseases (Tübingen, Germany)

18.05 Poster session (even numbers)

20.30 Social dinner (Restaurant La Botiga, Rambla de Catalunya, 27)

Thursday, July 10

Session IV: A β oligomers

Chair: Hilal A. Lashuel

- 9.00 A β dimers are found in soluble assemblies extracted from human brain and in vitro synthetic dimers form kinetically trapped soluble aggregates** Dominic M. Walsh, Brigham & Women's Hospital and Harvard Medical School (Boston, USA)
- 9.35 SELECTED ABSTRACT: Defining the oligomer form/s responsible for amyloid- β neurotoxicity in Alzheimer's disease** Natàlia Carulla, IRB Barcelona (Barcelona, Spain)

Session V: Mechanisms of A β toxicity

Chair: Christopher M. Dobson

- 10.10 Amyloid beta and synapse degeneration in Alzheimer's disease** Tara Spire-Jones, University of Edinburgh (Edinburgh, Scotland)
- 10.45 Single molecule studies of protein aggregates and how they damage neuronal cells** David Klenerman, University of Cambridge (Cambridge, UK)
- 11.20 Coffee break and poster session**
- 11.50 SELECTED ABSTRACT: Towards a molecular understanding of amyloid propagation in live cells** Gabriele S. Kaminski Schierle, University of Cambridge (Cambridge, UK)
- 12.05 Channel formation by A β and Tau: implications for Alzheimer therapeutics** Bruce L. Kagan, David Geffen School of Medicine, University of California, Los Angeles (Los Angeles, CA, USA)
- 12.40 Inflammation and defective insulin signalling as common molecular denominators connecting Type 2 diabetes and Alzheimer's disease** Fernanda G. De Felice, Federal University of Rio de Janeiro (Rio de Janeiro, Brazil)
- 13.15 Lunch (FresCo, Carme, 16)**

Session VI: Therapeutic strategies against-A

Chair: Sara Linse

- 15.00 The road map for preventing Alzheimer´s disease** Jose Luis Molinuevo, Hospital Clínic de Barcelona (Barcelona, Spain)
- 15.35 Single APP locus knockin mouse models of Alzheimer´s disease** Takaomi C. Saido, Riken Brain Science Institute (Saitama, Japan)
- 16.10 SELECTED ABSTRACT: Blocking microglial inflammation mediated by β -amyloid peptide (A β) via a mimic of islet amyloid polypeptide (IAPP)** Aphrodite Kapurniotu, Technische Universität München (Freising, Germany)
- 16.25 Coffee break and poster session**
- 16.55 The use of successive plasmapheresis with human albumin in patients with Alzheimer´s disease** Mercè Boada, Memory Clinic of Fundació ACE (Barcelona, Spain)
- 17.30 APP processing in the CNS in autosomal dominant and sporadic AD** Alberto Lleó, Hospital de Sant Pau de Barcelona (Barcelona, Spain)
- 18.05 Poster session (odd numbers)**
- 20.30 Social dinner (Restaurant Citrus, Passeig de Gràcia, 44)**

Friday, July 11

Session VII: Therapeutic strategies against-B

Chair: Fernanda G. De felice

- 9.00 Blocking A β seeding-mediated aggregation and toxicity in an animal model of Alzheimer´s Disease: A novel therapeutic strategy for neurodegeneration** Hilal A. Lashuel, Brain Mind Institute, École Polytechnique Fédérale de Lausanne (Lausanne, Switzerland)
- 9.35 SELECTED ABSTRACT: Structural investigation of EGCG-induced Alzheimer´s disease A β oligomers** Vanessa Morris, Technische Universität München (Garching, Germany)
- 09.50 SELECTED ABSTRACT: Immunoglobulin-general amyloid interaction motif (Ig-GAIM) molecules target beta amyloid and neurofibrillary tangles in vitro and in vivo** Haim Tsubery, NeuroPhage Pharmaceuticals (Cambridge, UK)
- 10.05 SELECTED ABSTRACT: Anti-amyloidogenic activity of self-assembled cyclic D,L- α -peptides as potential conformational inhibitors** Shai Rahimpour, Bar-Ilan University (Ramat-Gan, Israel)

10.25 Coffee break and poster session

10.55 Reelin delays amyloid-beta fibril formation and rescues cognitive deficits in Alzheimer´s disease Eduardo Soriano, University of Barcelona (Barcelona, Spain)

11.30 Selected abstract: Passive immunotherapy in J20 mice: target engagement without improved cognition Alexandra J. Mably, Brigham & Women´s Hospital and Harvard Medical School (Boston, USA)

11.45 AB therapeutics, do they engage the target? Kevin J. Barnham, The University of Melbourne (Melbourne, Australia)

12.20 Concluding remarks: Natalia Carulla, IRB