



INSTITUTE
FOR RESEARCH
IN BIOMEDICINE

Barcelona BioMed Conference Blood Brain Barrier November, 2-4, 2015

Programme

Monday, November 2, 2015

8.30 Registration

9.00 Welcome by Joan J. Guinovart

Session I:

Chair: Ernest Giralt

9.15 **Approaches to brain delivery. The use of peptides as BBB-shuttles**
Ernest Giralt, IRB Barcelona (Barcelona, Spain)

9.50 **Reducing attrition rate: implementation of human *in vitro* BBB models into the flow of standard assays used in drug discovery**
Rómeo Cecchelli, Université d'Artois (Lens, France)

10.25 - 10.55 **Coffee break and poster session**

10.55 **A Gateway to the Brain: Blood-Brain Barrier Shuttles and Delivery of Macromolecules**
Danica B. Stanimirovic, National Research Council of Canada and University of Ottawa (Ottawa, Ontario, Canada)

11.30 **Short talk 1: IPEC-J2 MDR1, a novel high-resistance cell line with functional expression of human P-glycoprotein (ABCB1) for drug screening studies**
Briger Brodin, University of Copenhagen (Copenhagen, Denmark)

11.55 **Short talk 2: A new therapeutic oligonucleotide to regulate the blood-brain barrier *in vivo***
Hiroya Kuwahara, Tokyo Medical and Dental University (Tokyo, Japan)

12.20 **Peptides and the Blood-Brain Barrier**
Abba J. Kastin, The BBB Group (Baton Rouge, LA, USA)

12.55 - 15.00 **Lunch (FresCo, C/ Carme, 16)**

Session II:

Chair: Meritxell Teixidó

15.00 **Drug Delivery to the CNS by colloidal Carrier Systems**
Gert Fricker, Heidelberg University (Heidelberg, Germany)

15.35 **Short talk 3: PET imaging of amyloid-beta protofibrils using a bispecific antibody-based radioligand**
Dag Sehlin, Uppsala University (Uppsala, Sweden)

16.00 **Short talk 4: Integration of in vitro and animal data in modeling and simulation of D2 and H1 receptor occupancy by drugs in humans**
Hiroyuki Kusuhara, The University of Tokyo (Tokyo, Japan)

16.25 **Nanoparticles as Drug Delivery Systems for the Brain**
Jörg Kreuter, Institute for Pharmaceutical Technology (Frankfurt, Germany)

17.00 - 17.45 **Coffee break and poster session**

17.45 **Short talk 5: Peptide-decorated paclitaxel-loaded polymeric nanoparticles as novel drug delivery systems for brain tumors therapy**
Cristina Fornaguera, Sagetis Biotech (Barcelona, Spain)

18.10 **From bee venom to blood-brain barrier shuttles: Development of minimized apamin derivatives for brain delivery**
Meritxell Teixidó, IRB Barcelona (Barcelona, Spain)

18.45 **End of session**

Tuesday, November 3, 2015

Session III:

Chair: Tetsuya Terasaki

9.00 **Global and Quantitative Targeted Phosphoproteomic Studies on the Blood-Brain Barrier P-gp Regulation Mechanism in Acute Phase Diseased Models**
Tetsuya Terasaki, Tohoku University (Sendai, Japan)

- 9.35 **Short talk 6: An ICPL strategy for the identification and quantification of proteins induced by glial cells in bovine brain capillary endothelial cells**
Yannis Karamanos, Université d'Artois (Lens, France)
- 10.00 **Neurovascular changes in tauopathies**
Andrej Kovac, Slovak Academy of Sciences (Bratislava, Slovakia)
- 10.35- 11.05 **Coffee break and poster session**
- 11.05 **How the brain barriers control T cell entry into the central nervous system**
Britta Engelhardt, University of Bern (Bern, Switzerland)
- 11.40 **Short talk 7: Defining endocytic and transcytotic vesicle trafficking mechanisms in BBB endothelial cells in vivo**
Ben Nichols, Medical Research Council Laboratory for Molecular Biology (Cambridge, UK)
- 12.05 **Plenary lecture: Biologics Drug Delivery to Brain with BBB Molecular Trojan Horses**
William M. Pardridge, Brain Research Institute (UCLA) (Los Angeles, CA, USA)
- 12.55 - 15.00 **Lunch (FresCo, C/ Carme, 16)**

Session IV:

Chair: Nikolaus Plesnila

- 15.00 **Disturbances of the BBB in disorders of the cerebral microcirculation**
Nikolaus Plesnila, Institute for Stroke and Dementia Research (Munich, Germany)
- 15.35 **Short talk 8: IPR19: a prolyl oligopeptidase inhibitor for the treatment of cognitive impairment associated with schizophrenia**
Roger Prades, Iproteos (Barcelona, Spain)
- 16.00 **Short talk 9: Involvement of insulin-degrading enzyme in the elimination of human amyloid- β peptide across the blood-brain barrier**
Sumio Ohtsuki, Kumamoto University (Kumamoto, Japan)
- 16.25 **Diffuse intrinsic pontine glioma (DIPG), an incurable developmental brainstem tumor, is characterized by an intact blood-brain-barrier (BBB)**
Jaume Mora, Hospital Sant Joan de Déu (Barcelona, Spain)
- 17.00-17.45 **Coffee break and poster session**
- 17.45 **Short talk 10: Stretch and/or oxygen glucose deprivation in an in vitro traumatic brain injury model induces calcium alteration and inflammatory cascade**
Malgorzata Burek, University of Wurzburg (Wurzburg, Germany)

18.10 **Reaching Across the Blood-brain Barrier for Treatment of Neuronopathic LSDs**
Dao Pan, Cincinnati Children's Hospital Medical Center (Cincinnati, Ohio, USA)

18.45 End of session

20.30 **Speakers dinner "Restaurant Attic" (C/Ramblas, 120)**

Wednesday, November 4, 2015

Session V:

Chair: William A. Banks

9.00 **The blood-brain barrier during sleep and its disorders**
Weihong Pan, The BBB Group (Baton Rouge, LA, USA)

9.35 **Ligand-Directed Targeting and Molecular Imaging Based on In Vivo Phage Display**
Renata Pasqualini (and Wadih Arap), The University of New Mexico (Albuquerque, NM, USA)

10.10-10.40 **Coffee break and poster session**

10.40 **Short talk 11: Carrying Therapeutic antibodies across the Blood-Brain Barrier**
Macarena Sánchez-Navarro, IRB Barcelona (Barcelona, Spain)

11.05 **Short talk 12: Impact of pannexin 1 and connexin 43 hemichannels on extracellular calcium-dependent transport dynamics in human brain capillary endothelial cells**
Masanori Tachikawa, Tohoku University (Sendai, Japan)

11.30 **Short talk 13: Reduced graphene oxide, a potential blood brain barrier modulator**
Monique Culturato Padilha Mendonça, State University of Campinas (Campinas, SP, Brazil)

11.55 **Short talk 14: Analysis of gene expression profiles related to the transport activity of the proton/organic cation antiport system in hCMEC/D3 cells**
Yoshiharu Deguchi, Teikyo University (Tokyo, Japan)

12.20 **Transport of Biologics Across the Blood-brain Barrier: Enhancement with Small Molecules**
William A. Banks, University of Washington (Seattle, WA, USA)

13.00 Closing remarks