

COST Exploratory Workshop

Pharmacology and Toxicology of the Blood-Brain Barrier: State-of-the-Art, Needs for Future Research and Expected Benefits for the EU

Thursday 11 and Friday 12 February 2010

COST Office Brussels, Avenue Louise 149, B-1050 Brussels

Final Programme

Thursday 11 February

8:25-8:30 **Jaime Kapitulnik** (Hebrew University of Jerusalem, IL, B25) – **Welcome remarks**

8:30-9:00 **Alan Boobis** (Imperial College London, UK, B25 Chair) – **Introduction**

Session I: Biology and physiology of the BBB

Chaired by: **Alan R. Boobis** (Imperial College London, UK, B25 Chair) and **Neven Zarkovic** (Rudjer Boskovic Institute, Zagreb, HR, B35 Chair)

9:00-9:45 **Joan Abbott** (King's College London, UK) – **Structure and function of the BBB**

9:45-10:20 **Olavi Pelkonen** (University of Oulu, FI, B25) – **Role of the BBB in disposition of endobiotics and xenobiotics (drugs and other chemicals)**

10:20-10:55 **Shlomo Sasson** (Hebrew University of Jerusalem, IL, BM0602) – **Glucose sensing and uptake in the brain**

10:55-11:15 *Coffee break*

11:15-11:50 **Jaime Kapitulnik** (Hebrew University of Jerusalem, IL, B25) – **Role of the BBB in modulating bilirubin entrance into the brain**

11:50-12:25 **Britta Engelhardt** (University of Bern, CH) – **Regulation of immune cell entry into the central nervous system**

12:25-13:00 **Momir Mikov** (School of Medicine, Novi Sad, RS, B25) – **Bile acids as BBB modifiers**

13:00-14:00 *Lunch*



Session II: Pharmacology and toxicology of the BBB

Chaired by: **Ursula Gundert-Remy** (Bundesinstitut fuer Risikobewertung, DE, B25) and **Giovanni E. Mann** (King's College London, UK, B35)

14:00-14:35 **David S Miller** (NIEHS/NIH, US) – **Modulation of P-glycoprotein at the BBB**

14:35-15:10 **Ursula Gundert-Remy** (Bundesinstitut fuer Risikobewertung, DE, B25) – **The BBB in toxicology**

15:10-15:45 **Neven Zarkovic** (Rudjer Boskovic Institute, Zagreb, HR, B35 Chair) – **4-Hydroxynoneal as second messenger of free radicals in the BBB**

15:45-16:05 *Coffee break*

16:05-16:40 **Gert Fricker** (University of Heidelberg, DE) – **Drug/natural product interactions at the BBB**

16:40-17:15 **Margareta Hammarlund-Udenaes** (Uppsala University, SE) – **Methods for estimation of brain active site concentration of drugs and other chemicals**

17:15-17:50 **Fabio Babiloni** (University of Rome "Sapienza", IT, BM0601 Chair) – **Biomarkers and methods for monitoring effects of drugs and other chemicals in the CNS**

Friday 12 February

Session III: BBB abnormalities in brain diseases, models and methodology

Chaired by: **Margareta Hammarlund-Udenaes** (Uppsala University, SE) and **Trevor Owens** (University of Southern Denmark, DK, BM0603 Chair)

8:30-9:05 **Trevor Owens** (University of Southern Denmark, DK, BM0603 Chair) – **The BBB: a key player in neuroinflammatory and neurodegenerative diseases**

9:05-9:40 **Helga E. de Vries** (VU University Medical Center, Amsterdam, NL, BM0603) – **BBB alterations in multiple sclerosis and cerebral amyloid angiopathy**

9:40-10:15 **Ryszard Pluta** (Medical Research Centre, Warsaw, PL, B30) – **An experimental model for the Alzheimer phenotype of cognitive deficits**

10:15-10:35 **Robert Crichton** (Université Catholique de Louvain, BE, D34 Chair) – **Neurodegenerative diseases (overview of the activities of D34)**

10:35-10:55 **Juergen Eckel** (German Diabetes Center, Duesseldorf, DE; BM0602 Chair) – **Overview of the activities of COST Action BM0602**

10:55-11:15 *Coffee break*

- 11:15-11:50 **David T Dexter** (Imperial College London, UK, D34) – **An in vitro cell model of the BBB**
- 11:50-12:25 **Gorka Orive** (University of the Basque Country, Vitoria, ES) – **Cell microencapsulation technology for drug delivery in the CNS**
- 12:25-13:00 **Pavle Andjus** (University of Belgrade, RS, B30) – **Complementing MRI with confocal microscopy in models of neurodegeneration**

13:00-14:00 *Lunch*

Session IV: Considerations for the design of effective drugs for brain diseases

Chaired by: **Elizabeth C.M. de Lange** (LACDR, Leiden, NL) and **Robert Crichton** (Université Catholique de Louvain, BE, D34 Chair)

- 14:00-14:35 **Jörg Kreuter** (Johann Wolfgang Goethe University, Frankfurt, DE) – **Use of nanoparticles to deliver therapeutics to the CNS**
- 14:35-15:10 **Jaap Rip** (toBBB, Leiden, NL) – **Receptor-mediated delivery of drugs across the BBB**
- 15:10-15:45 **Elizabeth C.M. de Lange** (LACDR, Leiden, NL) – **Mechanism-based PK/PD modelling of CNS-active drugs**

15:45-16:05 *Coffee break*

- 16:05-16:40 **Romeo Cecelli** (Université d'Artois, Lens, FR) – **Modelling the BBB in drug discovery and development**
- 16:40-17:15 **Andreas Reichel** (Bayer Schering Pharma, Berlin, DE) – **The BBB and CNS penetration: a drug discovery point of view**
- 17:15-18:00 **Robert Barnaby** (UCB Pharma, Braine L'Alleud, BE) – **Approaches and techniques to optimize brain delivery of new drug candidates: an industry perspective**
- 18:00-19:00 **Panel Discussion: The BBB – Past, Present and Future**

Chairs of the individual sessions