



UNIVERSITETET I OSLO
DET MEDISINSKE FAKULTET



TWO MEETINGS IN OSLO, JUNE 2008

1st International Meeting on Brain Aquaporins 9 – 10 June 2008

New insight in brain edema, stroke, spinal cord injury, meningitis, epilepsy, and multiple sclerosis

followed by

Mini Symposium – Brain development and early brain dysfunction 11 June 2008

The research on aquaporin water channels has expanded enormously over the last few years – sufficiently so to justify a meeting dedicated to aquaporins in the brain. Apart from providing an update of the field, the meeting will seek to couple the recent advances in our understanding of water transport at the molecular and cellular level, to the physiological data on water handling at the organ level and to diseases (including brain edema, stroke, spinal cord injury, meningitis, epilepsy, and multiple sclerosis) that are characterized by perturbations of water distribution or transport. Thus the meeting will have a focus on translational research and will span from molecular biology and neurochemistry to clinical medicine. One of the specific objectives of the meeting is to discuss how the new insight in the mechanisms of water transport could pave the way for new therapies.

The aquaporin meeting is sponsored by Centre for Molecular Biology and Neuroscience (CMBN; www.cmbn.no), the Steering committee for Molecular biology, Biotechnology, and Bioinformatics (EMBIO) at the University of Oslo, and the International Society for Neurochemistry (ISN). The meeting is also supported by the Nordic Centre for Research on Water Imbalance Related Disorders (WIRED) and the Gaustad Neuroscience Network (GNN). GNN was established in 2004 with the aim of forging stronger links between the clinical and basic research environments in the Oslo region.

If you are interested in participating please confirm your participation by email to Maria Beatriz Rocha m.b.a.c.rocha@medisin.uio.no. There is no registration fee.

On behalf of the organising committee,

Ole P. Ottersen
Professor,
Coordinator of WIRED
Director, Centre for Molecular Biology and Neuroscience
University of Oslo

Olivera Nestic-Taylor
Assistant Professor
Department of Biochemistry and Molecular Biology
University of Texas Medical Branch
Galveston

PRACTICAL INFORMATION:

Location

The venue of the meeting is the Domus Medica (Auditorium 13), at Gaustad Campus, University of Oslo.

Information and questions

Any questions regarding practical arrangements of the meeting can be directed to Maria Beatriz Rocha, Executive Officer, at m.b.a.c.rocha@medisin.uio.no, telephone: +47 22 85 15 28 (fax +47 22 85 14 88).

MEETING PROGRAMS:

1st International Meeting on Brain Aquaporins 9 – 10 June 2008

New insight in brain edema, stroke, spinal cord injury, meningitis, epilepsy, and multiple sclerosis

Please note that the program may be subject to adjustments

Monday 9 June

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| 08.00 – 08.20 | Registration and coffee (Auditorium 13, Domus Medica, Sognsvannsveien 9, 0316 Oslo) |
| 08.20 – 08.30 | Introduction: Ole P. Ottersen, CMBN & WIRED, University of Oslo |
| Session 1: Aquaporin water channels – structure and function (Chairs: Olivera Nestic-Taylor and Søren Nielsen) | |
| 08.30 - 09.00 | Peter Agre, Johns Hopkins School of Public Health: "Aquaporin water channels and malaria." |
| 09.00 – 09.30 | Poul Nissen, Aarhus: "Crystal structure of plasma membrane ion pumps." |
| 09.30 – 10.00 | Masato Yasui, Keio University: "Regulation, structure and function of brain aquaporins." |
| 10.00 – 10.30 | Per Kjellbom, Lund University: "Mechanism of aquaporin gating." |
| 10.30 – 11.00 | Coffee break and posters |
| 11.00 – 11.30 | Alan Verkman, University of California, San Francisco: "Functions of AQP4 in brain deduced from transgenic mouse and cell culture models." |

- 11.30 – 12.00 Anita Aperia, Karolinska Institute, Stockholm: “Regulation of aquaporins.”
- 12.00 – 12.30 Thomas Zeuthen, University of Copenhagen: “Cotransporters vs. aquaporins in brain water transport.”
- 12.30 – 14.00 Lunch and posters

Session 2: Aquaporins in brain edema and in CSF production and drainage (**Chairs:** Paola Nicchia and Leif Gjerstad)

- 14.00 – 14.30 **Gaustad Neuroscience Network Lecture:**
Olaf Paulson, University of Copenhagen: “Water movement across the blood-brain interface: physiological studies.”
- 14.30 – 15.00 Dan Greitz, Karolinska Institute, Stockholm: “Drainage of CSF: modeling and models.”
- 15.00 – 15.30 Jeppe Praetorius, University of Aarhus: “Role of NCBE in CSF secretion by the choroid plexus.”
- 15.30 – 16.00 Geoffrey T. Manley, University of California, San Francisco: “Roles of AQP4 in cerebral edema and brain water balance.”
- 16.00 – 16.30 Mahmood Amiry-Moghaddam, CMBN, University of Oslo: “Roles of perivascular endfeet in the pathophysiology of brain edema.”
- 16.30 – 17.00 Coffee break and posters

Special lecture

- 17.00 – 17.30 Rolf K. Reed, University of Bergen: “Determinants of interstitial fluid pressure.”

Concert

- 17.50 – 18.30 Jan Gunnar Sørbo - Beethoven: Piano concerto no.5 “Emperor”. Store auditorium Rikshospitalet B2.1003

Tuesday 10 June

Session 3: AQP4 in infection, trauma, brain tumor edema, cell migration, and angiogenesis (**Chair:** Anita Aperia and Geoffrey Manley)

08.30 – 08.55	Samira Saadoun, University of London: “Role of AQP4 in astrocyte migration and angiogenesis.”
08.55 – 09.20	Antonio Frigeri, University of Bari: "New finding on the role of AQP4 in Neuromyelitis optica"
09.20 – 09.50	The EATRIS lecture: Kjetil Taskén, Biotechnology centre, University of Oslo: “Chemical Biology: screening strategies for new drug candidates.”
09.50 – 10.20	Coffee break and posters
10.20 – 10.45	Tone Tønjum, CMBN and Institute of Microbiology, Rikshospitalet and University of Oslo: "Glial responses to meningococcal meningitis."
10.45 – 11.10	Vanda A. Lennon, Mayo Clinic College of Medicine: “Optic-spinal multiple sclerosis”: The neurological spectrum and diagnostic/therapeutic implications of AQP4 autoimmunity.”
11.10 – 11.35	Olivera Nestic-Taylor, University of Texas, Galveston: “Aquaporin 1 – a novel player in spinal cord injury.”
11.35 – 12.00	Marios Papadopoulos, University of London: “AQP4 in spinal cord injury.”
12.00 – 13.00	Lunch
13.00 – 13.50	Poster presentations

Session 4: Supramolecular organization and interactions of AQP4 (**Chair:** Masato Yasui and Mahmood Amiry-Moghaddam)

13.50 – 14.20	John Rash, Colorado State University, Ft Collins: "Potassium Siphoning' and AQP4-Mediated Water Fluxes are Essential for High-frequency Saltatory Conduction in the CNS"
14.20 – 14.40	Torgeir Holen, CMBN, University of Oslo: “Novel isoforms and higher order structure of AQP4.”
14.40 – 15.00	Stefano Ferroni, University of Bologna: “Functional and molecular assembly of cell volume-regulating plasma membrane proteins.”
15.00 – 15.20	Paola Nicchia, University of Bari: "Analysis of AQP4 organization in multiple size OAPs by BN-SDS/PAGE"

15.20 – 15.50 Coffee break

Session 5: AQP9 in brain (Chair: Samira Saadoun and Ann-Mari Brubakk)

15.50 – 16.10 Jerome Badaut, University of Lausanne: “Cellular distribution of AQP9 in brain: immunocytochemical analyses.”

16.10 – 16.30 Maria Mylonakou, CMBN, University of Oslo: “Expression analyses of AQP9 in brain.”

16.30 – 16.50 Torbjørn Rognes, CMBN, Rikshospitalet and University of Oslo: “Bioinformatics analysis of aquaporin genes.”

Concluding Comments

16.50 – 17.10 Olivera Nestic-Taylor and Ole Petter Ottersen

Mini Symposium – Brain development and early brain dysfunction

11 June 2008

Please note that the program may be subject to adjustments

Venue: Auditorium 13, Domus Medica, Sognsvannsveien 9, 0316 Oslo

Wednesday 11 June

09.00 – 09.10 Rector Geir Ellingsrud, University of Oslo: Welcome address.

09.10 – 09.30 Letten F. Saugstad: “The second regressive event in development: the link to infantile autism”.

09.30 - 10.15 Pasko Rakic, Yale University School of Medicine: “Cell migration in neurodevelopment.”

10.15 – 10.45 Coffee break

10.45 – 11.10 Joel Glover, University of Oslo: "Development of functional neuronal circuits"

11.10 – 11.35 Kai Kaila, University of Helsinki: “Development of GABAergic transmission and hippocampal network activity.”

- 11.35 – 12.00 Sampsu Vanhatalo, University Hospital of Helsinki: “Early development of human brain activity: structure vs function.”
- 12.00 – 12.10 Coffee break
- 12.10 – 12.35 Stefan Krauss, CMBN and Rikshospitalet: “Wnt signaling in forebrain development.”
- 12.35 – 13.00 Michel Khrestchatisky, CNRS-Université de la Méditerranée, Marseilles: Proteinases in CNS development and epilepsy.
- 13.00 – 13.25 Fernando Gomez- Pinilla, UCLA: “The effect of nutrition on brain development and function.”
- 13:25 Lunch and end of meeting.