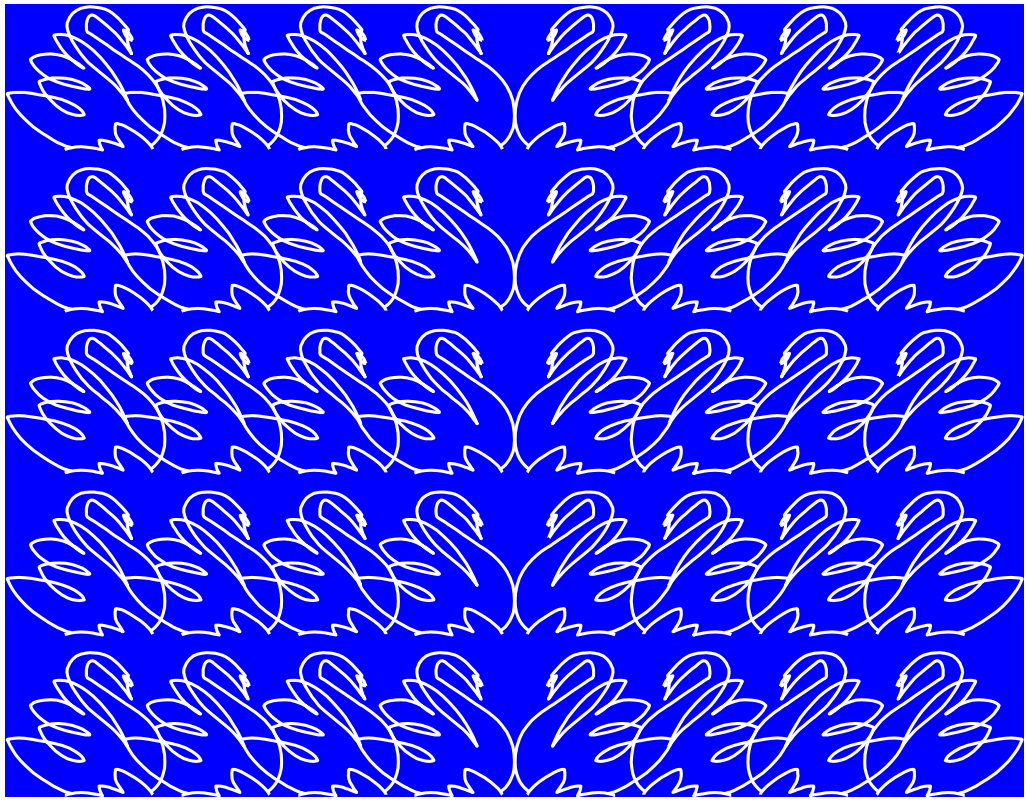
BENZON SYMPOSIUM
No. 66
AQUAPORIN 2022: AQUAPORINS IN HEALTH AND DISEASE
SEPTEMBER 26-29, 2022
COPENHAGEN, DENMARK



Organizing committee:
Lene N. Nejsum, Peter Agre, Jørgen Frøkiær, Robert Fenton, Rikke Nørregaard, Jeppe Prætorius, Birgitte Mønster Christensen, Finn Cilius Nielsen and Lars Fugger

MONDAY, SEPTEMBER 26, 2022

09:00-09:05	Welcome
	Opening Keynote Lecture
Chair	*Lene N. Nejsum*
09:05-09:50	***Peter Agre:*** Aquaporin Water Channels: looking back and looking forward
09:50-10:00	Discussion
Session I	***Non-mammalian aquaporins and aquaporins in vision***
Chair	*Giuseppe Calamita*
10:00-10:30	***Paul J. Donaldson***: Water Transport and the Optical Properties of the Aging Eye: Roles for *AQP's*
10:30-10:40	Discussion
10:40-11:10	**Coffee Break**
11:10-11:40	***Joan Cerdà***: Conserved and Divergent Features of Animal Aquaporins: The Case of Teleosts
11:40-11:50	Discussion
11:50-12:20	***Christophe Maurel***: Plant aquaporins as targets and players of environmental and hormonal signaling
12:20-12:30	Discussion
12:30-12:40	***Julia Castro Arnau***: AQP4A and TRPV4 Channels Mediate Compensatory Cell Volume Regulation in Activated Marine Fish Spermatozoa *(Poster no. I-1)*
12:40-12:45	Discussion
12:45-13:30	**LUNCH**
Session II	***Kidney and AQP2 trafficking I***
Chair	*Birgitte M. Christensen*
13:30-14:00	***Enno Klussmann***: Pharmacological Targeting of AQP2 Trafficking to Elucidate Molecular Mechanisms and to Find Novel Ways for Treatment of *AQP2 Trafficking Disease*
14:00-14:10	Discussion
14:10-14:40	***Dennis Brown:*** Regulatory mechanisms of AQP2 trafficking using informed and unbiased discovery approaches
14:40-14:50	Discussion
14:50-15:20	***Fumiaki Ando:*** Identification of Therapeutic Targets for Congenital Nephrogenic Diabetes Insipidus
15:20-15:30	Discussion
15:30-16:00	**Coffee Break**
16:00-16:10	***Marianna Ranieri***: *In Vivo* Treatment with Calcilytic Reserves the Reduced Expression of AQP2 and the Higher AQP2 Targeting miRNA-137 Levels in Calcium Sensing Receptor (CaSR) Knock-In Mice Mimicking Autosomal Dominant Hypocalcemia (ADH) *(Poster no. I-2)*
16:10-16:15	Discussion

16:15-16:25 ***Marleen Kortenoeven:*** A Vasopressin-Induced Change in Prostaglandin Receptor Subtype Expression Explains the Differential Effect of Prostaglandin E2 on Aquaporin-2 *(Poster no. I-3)*
16:25-16:30 Discussion

16:30-17:30 Poster session I

18:30-22:00 **Reception at Nimb Brasserie**
(we will assemble at 18:00 in the lobby; walking time from hotel Nimb Brasserie is about 15 min.)

TUESDAY, SEPTEMBER 27, 2022

Session III ***Aquaporins as clinical intervention targets***
Chair *Jørgen Frøkiær*

09:00-09:30 ***Rikke Nørregaard***: Estrogen regulates Aquaporin-2 in the Kidney
09:30-09:40 Discussion

09:40-10:10 ***Jeffrey Iliff***: Evidence for the role of AQP4 in the development of Alzheimer's disease and other dementing disorders
10:10-10:20 Discussion

10:20-10:50 **Coffee Break**

10:50-11:00 ***Philip Kitchen***: Multi-Assay Assessment of Putative AQP4 Inhibitors *(Poster no. II-1)*
11:00-11:05 Discussion

11:05-11:15 ***Catarina Pimpao***: Irreversible Inhibition of Human AQP10 Glycerol Permeability by a Gold Compound *(Poster no. II-2)*
11:15-11:20 Discussion

11:20-11:30 ***Michael Rützler***: The Aquaporin-9 Inhibitor RG100204 Reduces Septic Cardiomyopathy and Multiple Organ Failure in Murine Sepsis *(Poster no. II*-3)
11:30-11:35 Discussion

11:35-11:45 ***Graca Soveral***: Targeting AQP3 inhibits hydrogen peroxide and glycerol permeability and impairs cell proliferation and migration in melanoma *(Poster no. II-4)*
11:45-11:50 Discussion

11:50-13:00 **LUNCH**

Session IV ***Aquaporins in the brain***
Chair: *Jeppe Prætorius*

13:00-13:30 ***Masato Yasui:*** Pathological roles of aquaporin-4 in neurodegenerative diseases
13:30-13:40 Discussion

13:40-14:10 ***Mahmood Amiry-Moghaddam:*** Pathological roles of the brain aquaporins
14:10-14:20 Discussion

14:20-14:30 ***Mootaz Salman:*** Studying Aquaporin-4 spatial subcellular relocalisation using in vitro models for human bloodbrain barrier (BBB)-on-a-chip *(Poster no. II-5)*
14:30-14:35 Discussion

14:35-15:05 **Cofee Break**

15:05-15:15 ***Roslyn Bill:*** Dynamic aquaporin-4 subcellular relocalization has a central role in regulating brain fluid homeostasis in health and disease (*Poster no. II-6*)
15:15-15:20 Discussion

15:20-15:30 ***Felix Deffner:*** Aquaporin-4 Expression in the Choroid Plexus of the Brain (*Poster no. II-7*)
15:30-15:35 Discussion

15:35-17:00 Poster Session II

WEDNESDAY, SEPTEMBER 28, 2022

Session V ***Aquaporins function and structure***
Chair *Mark Knepper*

09:00-09:30 ***Karin Lindqvist:*** Structural and functional analyses of human AQP7 suggest novel roles in the human body
09:30-09:40 Discussion

09:40-10:10 ***Susanna Törnroth-Horsefield:*** Structural insights into human aquaporin regulation by protein-protein interactions
10:10-10:20 Disussion

10:20-10:50 **Coffee Break**

10:50-11:20 ***Lene N. Nejsum:*** Aquaporin-5 & epithelial cell-cell adhesion, migration & polarity
11:20-11:30 Discussion

11:30-11:40 ***Katarzyna Michalek:***Aquaporins: New markers for male (in)fertility in cattle (Bos Taurus)? Stage 1: Changes in the expression of AQPs in reproductive tract with the sexual maturity ***(****Poster no. III-1)*
11:40-11:45 Discussion

11:45-11:55 ***Ines da Silva***: Aquaporin-3 and Aquaporin-5 Facilitate Migration and Cell–Cell Adhesion in Pancreatic Cancer by Modulating Cell Biomechanical Properties *(Poster no. III-2)*
11:55-12:00 Discussion

12:00-12:10 ***Tamim Al-Jubair:*** Single Particle Cryo-EM Analysis of Transient Complexes Between Human Aquaporins and Regulatory Protein *(Poster no. III-3)*
12:10-12:15 Discussion

12:15-13:00 **LUNCH**

Session VI ***Kidney and AQP2 trafficking II***
Chair *Dennis Brown*

13:00-13:30 ***Michael J. Caplan:*** Exploring renal epithelial cell structure and trafficking in vivo
13:30-13:40 Discussion

13:40-14:10 ***Robert A. Fenton:*** Long-term and short-term regulation of AQP2 participate in body water homeostasis
14:10-14:20 Discussion

14:20-14:50 ***Mark A. Knepper:*** Long-term regulation of Aqp2 gene transcription
14:50-15:00 Discussion

15:00-15:30 **Coffee Break**

15:30-15:40 ***Pui Cheung:*** Ribosomal S6 kinase (RSK), a new player in the regulation of AQP2 intracellular trafficking (*Poster no. III-4*)
15:40-15:45 Discussion

15:45-15:55 ***Frédéric Login:*** Analysis of AQP2 trafficking using expansion microscopy *(Poster no. III-5)*
15:55-16:00 Discussion

16:00-17.30 Poster Session III

19:30-23:00 **Banquet at The University of Copenhagen**
(walk 19:20; time from hotel to University is about 3 min.)

THURSDAY, SEPTEMBER 29, 2022

Session VII ***Aquaporins in metabolism***
Chair *Peter Agre*

09:00-09:30 ***Jeff M. Sands:*** Aquaporins in Diabetes Mellitus and Diabetes Insipidus
09:30-09:40 Discussion

09:40-10:10 ***Giuseppe Calamita:*** Adipose and hepatic aquaglyceroporins in energy metabolism: regulation, physio-pathology and translational relevance
10:10-10:20 Discussion

10:20-10:50 **Coffee Break**

10:50-11:20 ***Weidong Wang:*** Mechanosensitive Cation Channel Piezo1 is Involved in Modulation of AQP2 in the Kidney
11:20-11:30 Discussion

11:30-11:40 ***Janne Lebeck:*** Aquaporin-9 deficiency does not alleviate hepatic steatosis in male and female mice fed a high fat diet (*Poster no. III-6*)
11:40-11:45 Discussion

11:45-11:55 ***Mariagrazia D' Agostino:*** Effect of dDAVP on the AQP3-dependent glycerol transport via V1aR in human colon HCT8 cells *(Poster no. III-7)*
11:55-12:00 Discussion

12:00-13:00 **LUNCH**

Session VIII ***Aquaporin in water and gas transportation***
Chair *Susanna Törnroth-Horsefield*

13:00-13:30 ***Nanna MacAulay:*** Does AQP membrane expression equal AQP-dependent water transport – or not?
13:30-13:40 Discussion

13:40-14:10 ***Walter Boron:*** *TBA*
14:10-14:20 Discussion

14:20-14:30 ***Sabino Garra***: Inhibition of AQP3 reduces hydrogen peroxide uptake and LPS-dependent redox signaling in human PBMCs *(Poster no. III-8)*
14:30-14:35 Discussion

14:35-15:00 **Coffee Break**

Final Keynote Lecture
Chair *Rikke Nørregaard*

15:00-15:50 ***Keynote Lecture: Giovana Valenti***: Targeting vasopressin/V2-type receptor/AQP2 axis in rare kidney diseases
15:50-16:00 Discussion

16:00-16:10 Closing Remarks