

ACTA PHYSIOLOGICA INTERNATIONAL SYMPOSIUM

Title: H⁺ and HCO₃⁻ in Physiology and Pathophysiology

**49TH SANDBJERG MEETING
ON MEMBRANE TRANSPORT**

Monday May 15th - Wednesday May 17th 2017

**Sandbjerg Estate
Sønderborg
Denmark**



Scientific program

MONDAY MAY 15th

8.15-8.30 **Welcome and introductory remarks**

1. Acid-base transporters in the cardiovascular system

Chair:

8.30-9.00 **Richard Vaughan Jones**, University of Oxford, UK
Title: *Ca²⁺-H⁺ coupling in the heart*

9.00-9.30 **Ernesto Alejandro Aiello**, Universidad Nacional de La Plata, Argentina
Title: *Na⁺-coupled HCO₃⁻ transporters in cardiac muscle*

9.30-10.00 **Hiromu Kawasaki**, Matsuyama University and Okayama University, Japan
Title: *Protons modulate perivascular axo-axonal neurotransmission in the rat mesentery*

10.00-10.15 **Christian Aalkjær**, Aarhus University, Denmark
Title: *Human AE3 mutation in the heart*

10.15-10.30 NN, Free communication
Title:

10.30-13.00 Posters and Coffee

13.00- 14.00 **Lunch**

2. Acid-base transport in epithelia

Chair:

14.00-14.30 **Jeppe Praetorius**, Aarhus University, Denmark
Title: *The Physiology of CSF formation*

14.30-15.00 **Smuel Muallem**, National Institutes of Health, USA
Title: *Regulation of HCO₃⁻ transporters by intracellular Cl⁻*

15.00-15.30 **Ivana Novak**, Copenhagen University, Denmark
Title: *Acid-base transport in pancreas – from physiology to pathophysiology*

15.30-16.00 **Coffee and cake**

Chair:

16.00-16.30 **Ursula Seidler**, Hannover Medical School, Germany

Title: *Acid-base transport in the intestine*

16.30-17.00 **Mark Donowitz**, Johns Hopkins University, USA
Title: *Intestinal Na⁺/H⁺ antiporters*

17.00-17.15 **Pause**

3. pH regulation and signaling in the nervous system

Chair:

17.15-17.45 **Doug Bayliss**, University of Virginia, USA
Title: *Control of Breathing*

17.45-18.15 **Kai Kaila**, University of Helsinki, Helsinki, Finland
Title: *pH and respiratory control*

18.15-18.45 **Jochen Deitmer**, Technical University Kaiserslautern, Germany
Title: *HCO₃⁻ sensing and metabolic responses in astrocytes*

19.00-20.00 **Dinner**

Chair

20.30-21.00 **Marian Hu**, Leibniz-Institute of Marine Sciences, Kiel, Germany
Title: *Acid-base transport in marine organisms*

22.00 **Midnight snack (Natmad)**

TUESDAY MAY 16TH

4. Regulation of intra- and extracellular pH in cancer biology

Chair:

- 8.30-9.00** **Jacques Pouyssegur**, Centre Scientifique de Monaco, Monaco
Title: *Cancer and pH*
- 9.00-9.30** **Robert Gillies**, Moffit Cancer Center, Tampa, USA
Title: *HCO₃⁻ treatment of tumor growth*
- 9.30-10.00** **Stine Falsig Pedersen**, University of Copenhagen, Denmark
Title: *pH dependent signaling in cancer cells*
- 10.00-10.30** **Ebbe Bødtkjer**, Aarhus University, Denmark
Title: *Malignant cell growth, pH_o and pH_i in breast cancer*

10.30-11.00 Coffee

5. Teeth, bones and stones

Chair:

- 11.00-11.30** **Michael L. Paine**, University of Southern California, USA
Title: *Acid-base transporters in maturation ameloblasts*
- 11.30-11.45** **Sebastian Frische**, Aarhus University, Denmark
Title: *The role of pH-fluctuations for enamel maturation*
- 11.45-12.00** **Ole Fejerskov**, Aarhus University, Denmark
Title: *The effect of fluoride on dental enamel before and after tooth eruption*
- 12.00-12.30** **Tim Arnett**, University College London, UK
Title: *Bone metabolism and systemic acidosis*
- 12.30-12.45** **Henrik Dimke**, University of Southern Denmark, Denmark
Title: *Acid-base balance and divalent cation handling by the kidney*
- 12.45-13.00** **NN**, Free communication
Title:

13.00-14.00 Lunch

6. The role of the kidneys to excrete acid and base

Chair:

- 14.00-14.30** **Carsten Wagner**, University of Zurich, Switzerland

Title: *Renal phosphate handling and acid base homeostasis*

14.30-14.45 **Jens Leipziger**, Aarhus University, Denmark

Title: *Diuretics and renal acid base handling*

14.45-15.15 **Francesco Treppicione**, Second University of Naples, Italy

Title: *Genetic basis for distal renal tubular acidosis*

15.15-15.45 **Donald Wesson**, DHWI, USA

Title: *The acid-base milieu and nephropathy progression*

15.45-16.00 NN, Free communication

Title:

16.00-16.30 Coffee and cake

7. Free communication in acid-base

Chair:

16.30-16.45 NN, Free communication

Title:

16.45-17.00 NN, Free communication

Title:

17.00-17.15 NN, Free communication

Title:

17.15-17.30 NN, Free communication

Title:

17.30-17.45 NN, Free communication

Title:

17.45-18.00 NN, Free communication

Title:

18.00-20.00 Festive Dinner

WEDNESDAY MAY 17TH

8. pH regulation in organelles and local domains

Chair:

8.30-9.00 **Laurent Counillon**, Université Nice-Sophia Antipolis, France

Title: *Intracellular acid-base transporters*

9.00-9.30 **Rajini Rao**, The Johns Hopkins University School of Medicine, USA
Title: *Interacellular NHEs in disease processes*

9.30-10.00 **Holger Becker**, Technical University Kaiserslautern, Germany
Title: *Extracellular carbonic anhydrases in acid-base transport*

10.00-10.30 **Albrecht Schwab**, University of Münster, Germany
Title: *Acid base transport in cell migrations*

10.30-11.00 Coffee

9. CO₂ transport

Chair:

11.00-11.30 **Pawel Swietach**, University of Oxford, UK
Title: *Why are red blood cells flattened?*

11.30-12.00 **Volker Endeward**, Medizinische Hochschule Hannover, Germany
Title: *Movement of gases across membranes I*

12.00-12.30 **Peter Pohl**, Johannes Kepler Universität, Austria
Title: *Movement of gases across membranes II*

12.30-13.00 **Walter Boron**, Case Western Reserve University, USA
Title: *Gas channels and pH*

13.00... **Final remarks**

13.00 - 13.30 **Lunch**

Departure

Sponsors

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- Scandinavian Physiological Society (SPS)
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- Aarhus University Graduate School of Health Sciences