

SECOND ANNOUNCEMENT

Second World Congress on Water Channel Proteins (Aquaporins and Relatives) Celebrating the 30th Anniversary of the Discovery of the First Water Channel Protein (Later Called Aquaporin1) Cluj-Napoca, Romania, May 6-10, 2015

The first water channel protein (WCP) was discovered in the 1980s during studies of the human red blood cell membrane. In the 1990s it became obvious that WCPs constitute a large family of membrane proteins that are present in all kingdoms of life: plants, microorganisms (archaea, bacteria, yeast, and protozoa), and animals including humans. WCPs exist in three subfamilies: (1) aquaporins (AQPs) that are mainly water channels; (2) aquaglyceroporins (and glycerol facilitators) that convey water and/or other small molecules across membranes; and (3) S-aquaporins “superaquaporins” or subcellular AQPs. WCPs (over 450 members) belong to the superfamily of major intrinsic proteins (MIPs, over 800 members). The atomic structures of some MIPs have been determined and common structure–function relationships are expressed in microorganisms, plants, multicellular species and humans. The physiological roles of WCPs, and some of their involvement in diseases, are known; thus in the past 30 years WCPs have become a “hot” area of research in biochemistry and molecular cell biology, with wide and increasing implications for human health. In fact, a new domain of natural and biomedical sciences was born, domain which was called **aquaporinology** (Benga, 2013).

In 2011 **The First World Congress on Water Channel Proteins (Aquaporins and Relatives) celebrating the 25th anniversary of the discovery of the first water channel protein (later called Aquaporin 1) was held in Cluj-Napoca, Romania, October 27-29, 2011.** It was attended by hundreds of scientists and students, and was unanimously appreciated as a great success.

Since the progress of knowledge in this new field is taking place at such a fast rate, we invite all scholars working in the field, or those interested in the general topic of WCPs, to become valued participants in the **Second World Congress** dedicated to all scientific aspects of WCPs, that will take place in Cluj-Napoca, Romania, May 6-10, 2015.

PRESIDENT OF THE WORLD CONGRESS:

GHEORGHE BENGA

**Member, Romanian Academy, Academy of Medical Sciences of Romania,
President, Cluj Branch of the Romanian Committee for the History and
Philosophy of Science of the Romanian Academy
President, The GHEORGHE BENGA FOUNDATION
President, The OUTNOBEL FOUNDATION
Professor, “Vasile Goldiș” Western University of Arad, Romania
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Scientific secretaries:

Ciprian Valentin Mihali (Lecturer | Experienced Researcher, The Institute of Life Sciences: Electron Microscopy Facility, “Vasile Goldiș” Western University of Arad
Ciprian Pribac (Senior Lecturer, Department of Cell and Molecular Biology, “Vasile Goldiș” Western University of Arad)

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The Second World Congress is organized under the Auspices of:



IFCC



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Romanian Academy



Academy of Romanian Scientists



“Gheorghe Ionescu-Sisesti” Academy of Agricultural and Forestry Sciences



Cluj City Council



Cluj City Hall

**The Second World Congress is organized by:
The GHEORGHE BENGA FOUNDATION**

In collaboration with:

MAIN PARTNERS (in alphabetical order):



Academy of Medical Sciences of Romania



“Babeş-Bolyai” University Cluj-Napoca



“Gheorghe Dima” Music Academy Cluj-Napoca



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“Vasile Goldiş” Western University Arad



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Academy of Romanian Scientists – Cluj Branch
Balkan Clinical Laboratory Federation

Casa Cărții de Știință, Cluj-Napoca
Romanian Academy – Cluj Branch

SECRETARIAT AND MANAGEMENT OF SERVICES:



Wens Tour:

Phone: +4 0264 590 749; Fax: +4 0264 595 755;

E-mail: aquaporin@wens.ro;

PRELIMINARY PROGRAM

Wednesday May 6, 2015: 17:00 – 19:30 Opening Ceremony, Opening Lecture, Concert
20:00 – 22:00 Welcome Cocktail

Thursday May 7, 2015: 8:00 - 19:00 Registration
09:00 – 11:00 Plenary Lectures and Scientific Sessions
11:00 – 11:30 Coffee Break
11:30 – 13:30 Plenary Lectures and Scientific Sessions
13:30 – 15:00 Poster Discussions (and Snack Break)
15:00 – 17:00 Plenary Lectures and Scientific Sessions
17:00 – 18:00 Coffee Break and Poster Discussions
18:00 – 20:00 Plenary Lectures and Scientific Sessions
20:30 - 22:30 Gala Dinner

Friday May 8, 2015: 8:00 - 17:00 Registration
09:00 – 11:00 Plenary Lectures and Scientific Sessions
11:00 – 11:30 Coffee Break
11:30 – 13:30 Plenary Lectures and Scientific Sessions
13:30 – 15:00 Poster Discussions (and Snack Break)
15:00 – 17:00 Plenary Lectures and Scientific Sessions
17:00 - Closing Ceremony, Award of Certificates of Attendance

Saturday May 9: Full Day Tour of Cluj-Napoca (with lunch)

Sunday May 10: Full Day Excursion (with lunch) to famous tourist sites in Transylvania:
Salina Turda, Alba Iulia (Museums, Cathedrals, Citadel)

CONFIRMED PLENARY KEY-NOTE LECTURES

François Chaumont (Louvain-la-Neuve, Belgium): *New insights into plant aquaporin function and regulation*

Andreas Eckhard (Tübingen, Germany): *Water channel-based regulation of inner ear fluids*

Hefeng Huang (Hangzhou, P.R. China): *Water channels in reproductive system*

Kenichi Ishibashi (Tokyo, Japan): *What will be the role of intracellular aquaporins?*

Umberto Laforenza (Pavia, Italy): *Water and hydrogen peroxide: two different molecules for a common channel*

Andreas F. Mack (Tübingen, Germany): *Aquaporin-4 in astroglial cells – a phylogenetic perspective*

Toshiyuki Matsuzaki (Gunma, Japan): *Tissue distribution of water channel proteins (aquaporins and relatives)*

Tsutomu Nakada (Niigata, Japan): *Aquaporin-4: the key to preventing Alzheimer's disease*

Richard Neutze (Gothenburg, Sweden): *Insights from high resolution X-ray structures of eukaryotic aquaporins*

Søren Nielsen (Aalborg, Denmark): *Roles of renal aquaporins, aquaglyceroporins and pharmaceutical exploitation*

Peter Pohl (Linz, Austria): *Determinants of the unitary water channel permeability*

Sei Sasaki (Tokyo, Japan): *Cross-talk between bed and bench of AQP2*

Emad Tajkhorshid (Urbana-Champaign, USA): *Visualizing structural and dynamical elements controlling water permeation and selectivity in aquaporins at an atomic resolution*

Andrea Yool, Mohamad Kourghi, Michael De Ieso, and Jinxin V Pei (Adelaide, Australia): *Novel blockers of Aquaporin-1 ion channels for the treatment of cancer*

TOPICS PROPOSED FOR SCIENTIFIC SESSIONS

Major Intrinsic Protein (MIP) Superfamily: Water Channel Proteins, Glycerol Facilitators
Classification and Phylogenetic Analyses of MIP Channels
Superaquaporins, Subcellular Aquaporins
Developmental Patterns of Expression of Water Channel Proteins
Methods/Techniques in Studying Water Channel Proteins
Molecular Structures of Water Channel Proteins: - Insights from Crystal Structure, MRI and Ultrastructural Analyses
Biophysical Characterization of Water Channels
Roles of Water Channel Proteins in the Transport of Substrates other than Water
Water Channel Proteins in Reconstituted Systems
Water Channel Inhibitors
Water Channel Proteins as Targets for Drugs in Various Cells and Diseases
Intracellular Messenger Modulation of Plant and Animal Water Channel Proteins
Plant Water Channel Proteins and Their Roles in: - Tissue Hydraulics; - Regulation under Environmental Stresses; - Carbon and Nutrient Assimilation
Bacterial Water Channel Proteins
Protozoan Water Channel Proteins
Insect and Invertebrate Water Channel Proteins
Water Channel Proteins in Aquatic Vertebrates, Amphibians, Reptiles, Birds, Mammalians
Water Channel Proteins and Cell Movements
Water Channel Proteins and Cancer
Water Channel Proteins and Nervous System: Physiology and Pathology
Gastro-intestinal, Liver and Biliary Tract Water Channel Proteins in Health and Disease
Eye Water Channel Proteins in Health and Disease
Kidney and Urinary Tract Water Channel Proteins in Health and Disease
Respiratory Apparatus Water Channel Proteins in Health and Disease
Water Channel Proteins and Cardiovascular System: Physiology and Pathology
Muscle Water Channel Proteins
Red Blood Cell Water Channel Proteins
Water Channel Proteins in Secretory Cells: Physiology and Pathology
Skin Water Channel Proteins in Health and Disease
Water Channel Proteins and Reproductive System
Adipose Tissue Water Channel Proteins and Metabolic Syndrome
Fluid Transport in Barrier Epithelia
Varia

CALL FOR PAPERS

Participants wishing to contribute to the Scientific Program with Lectures, Oral Communications, Short Communications or Posters are kindly requested to submit their **ABSTRACTS**, together with the **REGISTRATION FORM** of at least one author. For the abstract to be included in the final program **AT LEAST ONE AUTHOR** should have paid the **Registration Fee BEFORE** sending the **ABSTRACT**. If the paper is not accepted, the **Registration Fee** will be returned, after bank charges and a handling fee of **5 EUR** is deducted.

Abstracts should be submitted by E-mail to: aquaporin@wens.ro.

The authors should indicate the preferred form of presentation. The scheduled time is: **Lecture (25 min presentation, 5 min discussion)**, **Oral Communication (12 min presentation, 3 min discussion)**, **Short Communication (8 min presentation, 2 min discussion)**. The decision regarding the form of presentation will be taken by the **Abstract Committee** and will be communicated to authors by **March 30, 2015** (at the latest).

The **DEAD-LINE FOR ABSTRACT SUBMISSION** for Lectures, Oral and Short Communications and Posters is **March 15, 2015**. Abstracts received after **March 15, 2015** will not be included in the **ABSTRACT BOOK OF THE CONGRESS**.

DATES TO REMEMBER

May 6-10, 2015: Meeting dates

February 28, 2015: dead-line for payment of Reduced Registration Fee

March 31, 2015: dead-line for payment of Regular Registration Fee

April 30: dead-line for payment of Late Registration Fee; After April 30 the Registration Fee for Delegates will be increased to Eur 300

March 15, 2015: dead-line for Abstract submission for Lectures, Oral and Short Communications and Posters

ADDITIONAL INFORMATION: ggbenga@gmail.com