



Fourth Annual Conference of CIPKeBiP & »Superresolution Microscopy«

10-12 June 2013

**Institute of Pathological Physiology, University of Ljubljana, Medical Faculty, Zaloška cesta 4,
Ljubljana**

Organizers of the conference are Centre of excellence for integrated approaches in chemistry in biology of proteins, Institute of Pathological Physiology and Laboratory of Neuroendocrinology-Mol Cell Physiology, Carl Zeiss Reference Center for Confocal Microscopy.

The main theme of the fourth annual conference will be superresolution microscopy.
Two important aspects are addressed:

Section I: Lectures of superresolution

Section II: Hands-on experience

In section III the CIPKEBIP researchers will present their achievements in the frame of CIPKEBIP if possible connected with microscopy.

Official language

English

Registration

Registration will start at 8:30.

Program

10 Junij 2013

13:00 -18.00 Installation of demo equipment

11 Junij 2013

9:00-9:10: Conference openings
Dušan Turk, Scientific Director of CIPKEBIP
Mag. Urban Krajcar, Acting Director General, Ministry of education, science and sport
Robert Zorec, CIPKEBIP, Organizer of the Conference

Section I: Overview of super-resolution microscopy (Part A)

9:10-9:15 **Robert Zorec:** Chair Introduction
9:15-9:30 **Peter Amend:** Significance of high-resolution microscopy in live-cell imaging research
9:30-10:10 **Vladimir Parpura:** Exocytosis in astrocytes: Lessons learned from evanescent wave



and atomic force microscopy approaches
10:10-10:40 **Stéphane Oliet:** Surface dynamics of GLT-1 in astrocytes
10:40-11:10 **Alexander Egner:** Superresolution Microscopy (Nanoscropy)

11:10-11:30 Coffee break

11:30-12:00 **Caludia Geisler:** Two color STED microscopy
12:00-12:30 **Jaques Paysant:** SIM superresolution microscopy
12:30-12:45 **Marko Kreft:** Advanced microscopy and cell physiopathology
12:45-13:00 **Jernej Jorgačevski:** Gliotransmitter vesicles studied by STED microscopy

13:00-14:00 Lunch

Section II Hands-on Experience

Title of workshops:

ELYRA - Enter the world of super-resolution microscopy
LSM 780 - Highest quality detection of laser confocal microscopy
AxioZoom - Your motorized fluorescence stereo zoom microscope
Apo.Tome - Complete optical slices at all magnifications
LSM 700 - Your Compact confocal laser scanning microscope
Powerful STED - sted tripod invert microscope Axio Observer Z1

The participants will join the workshops regarding their log in at the conference.

14.00-15.30 Practical demonstration of the superresolution microscopy
15.30-15:45 Coffee break
15.45-17.00 Practical demonstration of the superresolution
17.00-17:15 Organizing Committee: Closure of the first day



12 June 2013

08:45 -09.00 Registrations

Section I: Overview of super-resolution microscopy (Part B)

09:00-11:00 **Robert Zorec** Chair, Astroglia: an introduction
Alexei Verkhratsky: History of Neurophysiology. Emphasis on Glia
Patrizia D'Adamo: Genetics of mental retardation and animal models
Sergei Kirov: Window into the injured brain: Neurons, astrocytes and microglia in Early stroke and traumatic brain injury

11:00-11:15 Coffee break

Section III: Presentations of CIPKEBIP project collaborators and CIPKEBIP researchers

11:15-12:15 **Dušan Turk**, Scientific Director of CIPKEBIP
Saverio Alberti, Center of Excellence for Research on Aging, Unit of Cancer Pathology
Anastasia Egorkina, NCP Cluster of Medical and Ecological Instrument Engineering And Biotechnologies
Prof. Natalia Artiushenko, Saint-Petersburg Pavlov State Medical University

12:15-13:00 Mechanisms and pathways of immune response, Chair: Maja Rupnik
Maja Rupnik, Workpackage Mechanisms and pathways of immune response – the overview
Jure Škraban, Studies of gut microbiota associated with *C. difficile* in humans and animals
Franc Strle, University Medical Centre Ljubljana

13:00-14:30 Intra in inter-cellular communication response, Chair: Enej Kuščer
Gregor Kosec, Promiscuity of an unusual acyltransferase domain enables Incorporation of extender units with chemically amenable side chains into polyketide chains
Marjan Slak Rupnik, Calcium and membrane depolarization waves in islets of Langerhans in pancreas tissue slices.
Jernej Iskra, Synthesis and bioactivity of synthetic peroxides
Anja Pucer, Group X Secreted Phospholipase A₂ Induces Lipid Droplet Formation and Promotes the Survival of Breast Cancer Cells
Eva Žerovnik - Oligomerization and amyloid fibril formation of stefin B in vitro and in cells.
Matej Vizovišek, N- AND C-TERMINOMIC APPROACHES FOR DISCOVERY OF SUBSTRATES OF CYSTEINE CATHEPSINS

14:30-15:15 Lunch

15:15 -16:45 Adaptation mechanisms of extremophiles to environment response, Chair: Nina Gunde Cimerman
Nina Gunde Cimerman, Adaptation mechanisms of extremophiles to environment
Monika Novak Babič, Dishwashers as an example of the indoor extreme environment for survival and propagation of *Exophiala dermatitidis* and *E. phaeomuriformis*



Janja Zajc, Cene Gostinčar, Metka Lenassi, Genomes of fungi from hypersaline environments

Ajda Ota, Archeosomes as vehicles for recombinant protein delivery into skin cells

16:45-18:15 Protein Bank: Proteins, their production, current use and perspectives,

Chair: Dušan Turk

Dušan Turk, Protein bank: Protein production, use and perspectives

Šnajder Marko, Calcium modulated mechanism of structural stability of pernisin

Miha Renko, Structural Insight into the Lysosomal Degradation of Glycans

Marko Mihelič, "The Same" Enzymes with Different Activities - Comparison of *S. aureus* Bifunctional Autolysin and SAV2307/Autolysin E Activity

Organizing Committee: Closure of the conference

Organizing Committee: Robert Zorec, Marko Kreft, Dušan Turk, Lijija Tušar