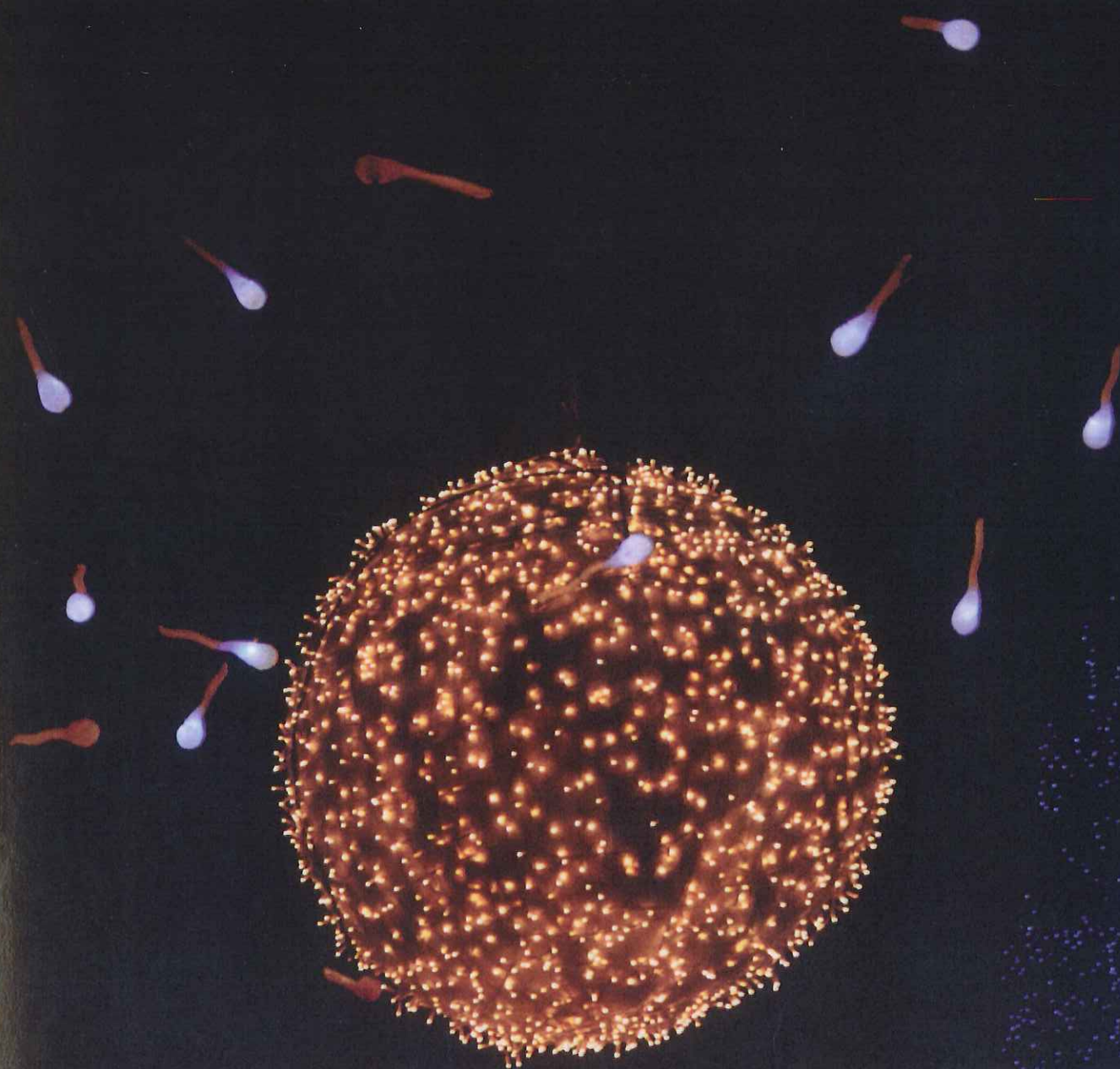




# FEPS 2009

12 – 15 November, Ljubljana, Slovenia



## **PROGRAMME AND ORGANIZING COMMITTEE**

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- Dr. Marko Kreft**, Ljubljana, Slovenia
- Dr. Nina Vardjan**, Ljubljana, Slovenia
- Dr. Helena Chowdhury**, Ljubljana, Slovenia
- Dr. Marjan Rupnik**, Maribor, Slovenia
- Dr. Dušan Šuput**, Ljubljana, Slovenia
- Dr. Brigita Drnovšek Olup**, Ljubljana, Slovenia
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- Dr. Helmut Hinghofer-Szalkay**, Graz, Austria
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- Dr. Sabine Schmidt**, Salzburg, Austria
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- Dr. Ulrich Pohl**, Munich, Germany
- Dr. Ger J. van der Vusse**, Maastricht, The Netherlands
- Dr. Erwin Neher**, Göttingen, Germany

## **LOCAL ORGANIZATION TEAM**

**Robert Zorec** (organizer, editor BOA)

**Nina Vardjan** (organizer, editor BOA)

**Marko Kreft** (organizer, COST BM0602, editor BOA)

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**Ajda Flašker** (venue coordination)

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# MEETING PROGRAMME

**THURSDAY, 12. NOVEMBER 2009:**

10:00-16:45 **Session I - EYPS**

LECTURE  
THEATRE 1

**European Young Physiologist Symposium**

Chairs: *Jernej Jorgačevski, Elisa Luin*

**Key note EYPS: Astrocytes potentiate hippocampal synaptic transmission**

*Gertrudis Perea*

**Feasibility of non-quantal release of acetylcholine from the postganglionic parasympathetic nerves in the right atrium of rat**

*Denis V. Abramochkin*

**Role of potassium currents in the repolarization of canine ventricular myocardium under action potential clamp conditions**

*Balazs Horvath*

**TMEM16B is a novel  $Ca^{2+}$ -activated  $Cl^{-}$  channel candidate in vertebrate olfactory transduction**

*Michele Dibattista*

**Break 11:20-11:40**

Chairs: *Michele Dibattista, Giada Cellot*

**The significance of lipid raft/caveolae microdomains in several aspects of the NK1-R biology**

*Alenka Hrovat*

**Actin-dependent volume recovery of embryonic cell subjected to hypoosmotic shock**

*Maria Pogorelova*

**The role of reactive oxygen species on proliferation and  $Ca^{2+}$  signalling of skeletal muscle cells during *in vitro* ageing**

*Elisa Luin*

**Embryonic organotypic cultures: An *in vitro* model for excitotoxicity-due spinal cord injury**

*Graciela L. Mazzone*

**Nicotine enhances sub threshold resonance behavior of oriens-lacunosum moleculare interneurons in the mouse hippocampus**

*Marilena Griguoli*

**Lunch 12:55-13:55**

Chairs: *Gertrudis Perea, Denis V. Abramochkin*

**Key note EYPS: Role of substrates, metabolites and transcriptional regulation of metabolism in cardiac arrhythmia**

*Iman S. Gurung*

**Differential molecular consequences of excitotoxicity and metabolic dysfunction after *in vitro* experimental spinal cord injury**

*Anujaianthi Kuzhandaivel*

**Effect of free oxygen radicals on excitability of rat hypoglossal motoneurons *in vitro***

*Francesca Nani*

**Early in postnatal development, tonic activation of kainate receptors by ambient glutamate reduces GABA release from mossy fiber terminals**

*Maddalena Delma Caiati*

**Break 15:10-15:30**

Chairs: *Iman S. Gurung, Balazs Horvath*

**The effect of gender and hand skin perfusion on tissue insulation during cold exposure**

*Boris RM Kingma*

**Loss of LTD at MF-CA3 synapses overexpressing GLT-1**

*Victoria Safiulina*

**Neuronal functional differentiation in mammalian postnatal stem/precursor cells**

*Alberto Montalbano*

**Carbon nanotubes direct interactions with neuronal membranes ignite post spike excitability**

*Giada Cellot*

**Gephyrin regulates both GABAergic and glutamatergic synaptic transmission in cultured hippocampal neurons**

*Rocco Pizzarelli*

14:00-16:45

LECTURE  
THEATRE 2

**Educational Workshop (organised by FEPS):  
Reappraisal of basic sciences in the construction of  
medical curricula and how to evaluate study progress by  
portfolio**

Chairs/Organizers:

*Liisa Peltonen, Helsinki, Finland*

*Luc Snoeckx, Maastricht, The Netherlands.*

**What science should be included within integrated  
curricula?**

*Karen Mattick, Exeter, UK*

**Teaching in physiology and pathophysiology in the  
medical curriculum**

*Brigitte Velkeniers, Brussels, Belgium*

**Break 15:15-15:45**

**Portfolio-based assessment of medical and generic  
competencies in the physician – clinical investigator  
master program at the Maastricht University**

*Sylvia Heeneman, Maastricht, The Netherlands*

**Perspectives on test-enhanced learning and basic science**

*Charlotte Ringsted, Copenhagen, Denmark*

17:00-17:30

LECTURE  
THEATRE 3

**FEPS 2009 Opening Ceremony**

17:45-19:00

LECTURE  
THEATRE 3

**FEPS Keynote Lecture**

***Measuring and manipulating second messenger  
levels in cellular organelles of living cells***

*Tullio Pozzan, Padova, Italy*

19:00-

**Welcome and get-together party**

## FRIDAY, 13. NOVEMBER 2009:

### 09:00-11:00 **Session IIa - Symposium**

LECTURE

THEATRE 1

#### ***Astrocyte dynamics in health and disease***

Chair/Organizer:

*Milos Pekny, Gothenburg, Sweden*

**Glial fibrillary acidic protein and vimentin are negative regulators of the neurogenic niche**

*Milos Pekny*

**Reactive astrogliosis and post neurotrauma recovery: Human neural stem cell-reactivated proneuronal circuitry in GFAP<sup>-/-</sup>Vimentin<sup>-/-</sup> mice following spinal cord injury**

*Yang (Ted) D. Teng*

**Astrocyte subtypes and GFAP isoforms in the developing and adult brain**

*Elly M. Hol*

**Properties of regulated exocytosis and vesicle trafficking in astrocytes**

*Marko Kreft*

### 09:00-11:00 **Session IIb - Symposium**

LECTURE

THEATRE 2

#### ***Assessment and consequences of asynchronous activation of the ventricles***

Chair/Organizer:

*Frits W. Prinzen, Maastricht, The Netherlands*

**The quest for ventricular pacing sites that preserve cardiac contractility and efficiency**

*Frits W. Prinzen*

**Contraction patterns in dyssynchronous hearts**

*Borut Kirn*

**Pacing-induced protection in the embryonic chick heart model**

*Eric Raddatz*

**Role of ventricular activation for arrhythmogenesis in the CAVB dog model**

*Thom R.G. Stams*

09:00-11:00 **Session IIc - Symposium**

LECTURE  
THEATRE 3

***The physiology of endocrine pancreas***

Chair/Organizer:

*Marjan Rupnik, Maribor, Slovenia*

**The physiology of rodent beta-cells in pancreas slices**

*Marjan Rupnik*

**Ion channels and the regulation of insulin secretion: of mice and men**

*Patrik Rorsman*

**Protein serotonylation modulates insulin secretion**

*Diego J. Walther*

**Cell swelling-mediated stimulus-secretion-coupling and actions of insulin in clonal insulinoma cells**

*Martin Jakab*

09:00-11:00 **Session IId - Symposium**

LECTURE  
THEATRE 4

***Serpins: A family of proteins regulating a variety of physiological processes***

Chair/Organizer:

*Margarethe Geiger, Vienna, Austria*

**Structure and function of serpins in blood coagulation system**

*Wei Li*

**Protein C inhibitor: A serpin with multiple functions**

*Margarethe Geiger*

**Serpin in cancer: Maspin as a paradigm**

*Ming Zhang*



09:00-11:00 **Session IIe – Symposium**

LECTURE  
THEATRE 5

***Molecular Physiology of Hearing***

Chair/Organizer:

*Tina Pangršič, Göttingen, Germany*

**Ca<sup>2+</sup> signals regulating hair cell transmitter release**

*Tobias Moser*

**Pathology of cochlear ion transport: Insights from deaf mice and humans**

*Thomas J. Jentsch*

**Roles for prestin in amplification and frequency tuning in the cochlea**

*Ian Russell*

**Molecular perturbation of a large CNS auditory synapse yields new insights into transmitter release and active zone function**

*Ralf Schneggenburger*

11:30-13:00 **Session IIIa - Educational Workshop**

LECTURE  
THEATRE 2

***Computer models in physiology***

Chair:

*Luc Snoeckx, Maastricht, The Netherlands*

**An interactive model for oxygen transport and acid base physiology in human body**

*Vito Starc*

**High altitude adaptation in the respiratory control system. A mathematical model simulation**

*Vito Starc*

11:30-13:00 **Session IIIb - Oral Presentations**

LECTURE  
THEATRE 3

***Exercise physiology***

Chair:

*Jørgen Jensen, Oslo, Norway*

**Changes in the venous blood oxygen stores at the onset of exercise**

*Maria Pia Francescato*

**Effects of grape seed extract on oxidative damage and antioxidant defense induced by acute and chronic exercise in rats**

*Hakkı Gökbel*

**The effect of interval training combined with external pressure on thighs on maximal and submaximal performance**

*Michail E. Keramidas*

**The levels of leptin, ghrelin and resistin after chronic exercises in rats: The effect of caffeic acid phenethyl ester (CAPE) on these parameters**

*H. Serdar Gergerlioğlu*

11:30-13:00

### **Session IIIc - Oral Presentations**

LECTURE  
THEATRE 4

***Diabetes, obesity, pancreas-physiology***

Chair:

*Jan Kopecky, Prague, Czech Republic*

**The role of endocrine tissue network topology in beta-cell bursting oscillations patterns**

*Dean Korošak*

**Cardiac ryanodine receptors: A novel therapeutic target in diabetic cardiomyopathy**

*Belma Turan*

**The contribution of Stim1 and Orai1 to Ca<sup>2+</sup> homeostasis and insulin secretion in INS1-R9 β-cells**

*Ismene Fertschai*

**Effects of grape seed extract supplementation on plasma oxidative stress and antioxidant defense markers in diabetic rats**

*Nilsel Okudan*

**Possible involvement of leptin-AMPK axes in induction of muscle nonshivering thermogenesis by high-fat diet in mice: Association with obesity-resistance**

*Jan Kopecky*

**Body composition and body fat percentage of students at the University of Latvia in 2007-2009**

*Liga Ozolina-Moll*

11:30-13:00

## Session III d - Oral Presentations

LECTURE  
THEATRE 5

### *Respiratory and cardiovascular physiology*

Chair:

*Ger J. van der Vusse, Maastricht, The Netherlands*

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*11.32*

The impact of family history for vascular pathology on the autonomic cardiovascular function in young normotensive individuals

*Nina Belova*

Lung mechanics measurements by the end-inflation occlusion method in mice

*Alessandro Rubini*

*12.14*

Hemifusion states of variable duration precede exocytotic fusion pores in alveolar type II cells

*Pika Miklavc*

*12.36*

Postnatal changes in the cardiomyocyte- contractility and calcium transients

*Sarah Martin*

14:00-15:30

## Session IV Poster Session and Exhibition

POSTER AREA  
MF

15:30-16:30

## Keynote Lecture

LECTURE  
THEATRE 3

*The Glial Regulation of Sleep and Memory*

*Philip Haydon, Boston, USA*

Break 16:30-17:00

17:00-19:00 **Session Va - Symposium**

LECTURE  
THEATRE 1

***Glia in neurodegenerative processes***

Chair/Organizer:

*José Julio Rodríguez Arellano, Manchester, UK*

**Astroglial atrophy and hypertrophy in the hippocampus and entorhinal cortex during the progression of Alzheimer's disease: A combined process**

*José Julio Rodríguez Arellano*

**Diffusion parameters of the extracellular space in health and disease**

*Eva Sykova*

**Glutamate and ATP excitotoxicity in white matter damage**

*Carlos Matute*

**Microglial responses to acute spinal cord injury in vivo**

*Frank Kirchhoff*

17:00-19:00 **Session Vb - Symposium**

LECTURE  
THEATRE 2

***Calcium signals in cell death and disease***

Chairs/Organizers:

*Alexei Verkhratsky, Manchester, UK*

*Ole H. Petersen, Liverpool, UK*

**Physiology and pathophysiology of calcium signalling in pancreatic acinar cells**

*Ole H. Petersen*

**Alteration of nucleocytoplasmic transport occurs during calcium-mediated cell death**

*Daniele Bano*

**Aberrant calcium signalling in amyotrophic lateral sclerosis**

*Julian Grosskreutz*

**Dynamic calcium stores, calcium signalling and neurodegeneration**

*Alexei Verkhratsky*

17:00-19:00 **Session Vc - Symposium**

LECTURE  
THEATRE 3

***Regulation of synaptic transmission***

Chair/Organizer: *Stephen Smith, Portland, USA*

**Regulation of nerve terminal function by the extracellular  
Calcium-sensing receptor**

*Stephen M. Smith*

**Trafficking and function of v-SNARE protein VAMP4 at  
central synapses**

*Jesica Raingo*

**Quantal size and multivesicular exocytosis at the hair-  
cell synapse: Paired recordings with membrane  
capacitance measurements**

*Henrique von Gersdorff*

**Regulation of synaptic transmission by the ubiquitin-  
proteasome system**

*Felix E. Schweizer*

17:00-19:00 **Session Vd - Symposium**

LECTURE  
THEATRE 4

***Histamine and CNS***

Chair/Organizer: *Mojca Kržan, Ljubljana, Slovenia*

**Is brain histamine involved in the response to  
antidepressant drugs?**

*Patrizio Blandina*

**The role of neuronal histamine and H3 receptors in  
alcohol-related behaviour**

*Pertti Panula*

**Interactions between histaminergic and cannabinoid  
systems; a potential therapeutic target for cognitive and  
feeding behaviour impairments?**

*Maria Beatrice Passani*

**Histamine as a regulator of astrocyte function**

*Metoda Lipnik-Štangelj*

**Astrocytes as a site for histamine inactivation**

*Mojca Kržan*

17:00-19:00 **Session Ve - Symposium**

LECTURE  
THEATRE 5

***Obesity and cardiac cellular physiology***

Chair/Organizer:

*M.-Saadeh Suleiman, Bristol, UK*

**What has MR told us about the heart in obesity and diabetes?**

*Kieran Clarke*

**Mice fed high-fat diet display altered metabolic characteristics of their hearts and myocytes and increased vulnerability to cardiac insult**

*Anabelle Chase*

**Differential analysis of the cardiac proteome of rats artificially selected for either low or high aerobic capacity**

*Jatin Burniston*

**High-Fat diet, coronary disease and myocardial protection**

*M.-Saadeh Suleiman*

20:30-

**Young Physiologists' Party**

**Optional Wine Tasting**

20.00

**SATURDAY, 14. NOVEMBER 2009:**

09:00-11:00

LECTURE  
THEATRE 1

**Session VIa - Symposium**

***AMP-activated protein kinase: Regulation of energy supply at cellular and whole body level***

Chair/Organizer:

*A. Mark Evans, Edinburgh, UK*

**AMP-activated protein kinase and hypoxia-response coupling in the carotid body and pulmonary artery**

*A. Mark Evans*

**Role of hypothalamic fatty acids, AMPK and ghrelin in the regulation of food intake**

*Miguel López*

**5 AMP-activated protein kinase (AMPK): A role in female reproduction?**

*Joëlle Dupont*

**AMP-activated protein kinase serves as a universal regulator of autophagy**

*Maria Høyer-Hansen*

09:00-11:00

LECTURE  
THEATRE 2

**Session VIb - Symposium**

***Ion transporters in cell migration and apoptosis***

Chair/Organizer:

*Markus Ritter, Salzburg, Austria*

**The Na<sup>+</sup>/H<sup>+</sup> exchanger NHE1 generates a pericellular pH-nanoenvironment required for cell migration**

*Christian Stock*

**Ion channels keep mobile cell on the go**

*Albrecht Schwab*

**The functional role of the non-gastric H<sup>+</sup>/K<sup>+</sup>-ATPase ATP12A (ATP1AL1) as anti-apoptotic ion transporter**

*Markus Ritter*

**Interaction of Bax with a mitochondrial potassium channel is crucial for its action in apoptosis**

*Ildikò Szabò*

09:00-11:00 **Session VIc - Symposium**

LECTURE  
THEATRE 3

*The physiology of neural stem cells in the healthy and diseased brain*

Chair/Organizer:

*Ludwig Aigner, Salzburg, Austria*

**Stem cells and neurogenesis in the adult brain**

*Ludwig Aigner*

**The physiology of neural stem cells in the healthy and diseased brain**

*Jürgen Winkler*

**The rise of cancer stem cells in high-grade gliomas – a matter of a pathological stem cell niche?**

*Peter Hau*

**Glutamatergic excitation of mature and newly generated young hippocampal granule cells**

*Josef Bischofberger*

09:00-11:00 **Session VIId - Symposium**

LECTURE  
THEATRE 4

*Physiology of deconditioning  
Supported by European Space Agency (ESA)*

Chair/Organizer:

*Igor Mekjavic, Ljubljana, Slovenia*



**Effects of prolonged bed rest on mechanical properties of peripheral blood vessels**

*Ola Eiken*

Title to be announced

*Per Tesch*

**Determinants of bone loss during immobilization**

*Jörn Rittweger*

**Physiology of deconditioning – nutritional aspects**

*Ian A. Macdonald*



09:00-11:00 **Session VIe - Symposium**

LECTURE  
THEATRE 5

***Exocytosis and fusion pore physiology***

Chair/Organizer:

*François Darchen, Paris, France*

**What drives fusion pore enlargement?**

*François Darchen*

**Different roles of the SNARE-complex in neuronal exocytosis: From vesicle docking to the fusion pore**

*Jakob B. Sørensen*

**Ca dependence of exo and endocytotic coupling at a glutamatergic synapse**

*Takeshi Sakaba*

**Fusion pore regulation of peptidergic vesicles**

*Robert Zorec / Nina Vardjan*

11:30-13:00

**Session VIIb – Discussion forum**

LECTURE  
THEATRE 3

***Organized by Zeiss: Discussion forum on high resolution microscopy***



**Practical superresolution microscopy:  
Theory and applications of PALM and SR-SIM**

*Annette Bergter*

11:30-13:00

**Session VIIc - Oral Presentations**

LECTURE  
THEATRE 4

***Endocrinology***

Chair:

*Marjan Rupnik, Maribor, Slovenia*

**Expression of 11 $\beta$ -HSD1 and H6PDH during ontogeny**

*Lenka Rehakova*

**The adaptive response of leydig cells to immobilization stress: Stimulation of PKA and StAR protein**

*Tatjana S. Kostic*

**Intracellular chloride ions modulate secretory activity of mouse chromaffin cells**

*Jurij Dolenšek*

GPCR-mediated signaling-induced paracrine transactivation of CB1 receptor, an interaction between the effects of calcium-mobilizing hormones and cannabinoid system

*László Hunyady*

Lysophospholipids modulate voltage-gated calcium channel currents in pituitary cells; effects of lipid-stress

*Itzhak Nussinovitch*

Behavioural effects of growth hormone replacement therapy in aged Wistar rats

*Rubén V. Rial*

11:30-13:00

## **Session VIId - Oral Presentations**

LECTURE  
THEATRE 5

### ***Neurophysiology and sensory system***

Chair/Organizer: *Tina Pangršič, Goettingen, Germany*

Habitual characteristics of auditory Go-P3 and NoGo-P3 responses are different

*Rezan Hatungil*

Arrestin in *Drosophila* phototransduction

*Gregor Belušič*

Dose dependent nicotine effects on brain excitability in immature rats

*Dana Maresova*

Otoferlin, a synaptotagmin-like calcium sensor?

*Ellen Reisinger*

Function of prestin as a bicarbonate-chloride antiporter

*Pavel Mistrík*

14:00-15:30

## **Session VIII**

POSTER AREA  
MF

### **Poster Session and Exhibition**

15:30-16:30

### **Keynote Lecture:**

LECTURE  
THEATRE 3

***Structure-function relationship of the endocrine pancreas at a glance***

*Per-Olof Berggren, Stockholm, Sweden*

17:00-19:00 **Session IXa - Symposium**

LECTURE  
THEATRE 1

***Human cutaneous microcirculation in health and disease***

Chair/Organizer:

*Helena Lenasi, Ljubljana, Slovenia*

**Skin perfusion and human heat exchange: How, why and use**

*Wouter van Marken Lichtenbelt*

**Local regulation of human cutaneous microcirculation: Impact of endothelium-dependent vasodilatation**

*Helena Lenasi*

**Skin vasomotion investigation in different human pathological conditions**

*Marco Rossi*

**Skin microcirculation in the upper and lower extremities of diabetic patients with and without large vessel disease**

*Vilma Urbančič-Rovan*

17:00-19:00 **Session IXb - Symposium**

LECTURE  
THEATRE 2

***Rhythmic oscillations of spinal networks in health and disease models***

Chair/Organizer:

*Andrea Nistri, Trieste, Italy*

**Pathophysiology of experimental spinal injury *in vitro***

*Andrea Nistri*

**Cellular and network mechanisms of rhythm generation in spinal cord circuits**

*Jürg Streit*

**Temporal evolution of spontaneous Ca<sup>2+</sup> signals generated by ventral neurons is a marker of spinal cord maturation *in vitro***

*Laura Ballerini*

**Exploring the early damage to the locomotor circuits with an *in vitro* model of acute Spinal Cord Injury**

*Giuliano Taccola*

17:00-19:00 **Session IXc - Symposium**

LECTURE  
THEATRE 3

**Vasopressin and Oxytocin receptors: Looking for new tools, pharmacology, physiology and therapeutic agents.**

Chair/Organizer:

*Govindan Dayanithi, Prague, Czech Republic*

**Vasopressin receptor-mediated calcium signals and peptide release in the supraoptic nucleus neurons: Contradictions and compromises**

*Govindan Dayanithi*

**Functional consequences of vasopressin and corticoliberin receptors co-expression in native and heterologous models**

*Gilles Guillon*

**Oxytocin receptor coupling to different G-proteins: Role in receptor trafficking**

*Bice Chini*

**Novel oxytocin receptor-linked signaling networks**

*Hans H. Zingg*

17:00-20:00 **Session IXd - Symposium**

LECTURE  
THEATRE 4

**Muscle and fat: Molecular mechanisms of signaling and crosstalk**

*COST BM0602 WG3-meeting*



Chair/Organizers:

*Jørgen Jensen, Oslo, Norway*

*Marko Kreft, Ljubljana, Slovenia*

**Molecular mechanisms of the fat and muscle crosstalk**

*Juergen Eckel*

**Bridging mitochondrial dynamics and metabolism in muscle**

*Antonio Zorzano*

**PIKfyve regulates glucose uptake in skeletal muscles**

*Jørgen Jensen*

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**Reduced AMP-activated protein kinase activity in mouse skeletal muscle does not exacerbate the development of insulin resistance with obesity**

*Sebastian Beck Jørgensen*

**Redox regulation of glucose metabolism**

*Tarja Kokkola*

**Zooming out on AMPK substrates: A phosphoproteomic approach**

*Didier Vertommen*

17:00-19:00

## **Session IXe - Symposium**

LECTURE

THEATRE 5

**$Ca^{2+}$ , a miraculous messenger - an update**

Chair/Organizer:

*Wolfgang Graier, Graz, Austria*

**Can we reveal an agonist-induced  $Ca^{2+}$  entry hidden by the ubiquitous store-operated  $Ca^{2+}$  entry in endothelial cells?**

*Maud Frieden*

**Endoplasmic reticulum-mitochondria crosstalk and cellular stress signaling**

*Gyorgy Szabadkai*

**Mitochondrial  $Ca^{2+}$  uptake is differentially determined by the  $Ca^{2+}$  source and the expression-level of the novel uncoupling proteins UCP2 and UCP3**

*Roland Malli*

**Spatial  $Ca^{2+}$  Signaling in Cardiac Myocytes**

*Jens Kockskämper*

20:00-

## **Special Event**

# SUNDAY, 15. NOVEMBER 2009:

## 09:00-10:30 **Session Xb - Oral Presentations**

LECTURE  
THEATRE 3

### *Gravitational physiology*

Chair/Organizer: *Nandu Goswami, Graz, Austria*

**Patterns of cardiovascular control during repeated tests of orthostatic loading**

*Jerry Joseph Batzel*

**Multiparametric structural analysis of retinal vessels induced by pathological states: Possible space flight applications?**

*Laszlo Simon*

**Continuous epinephrine infusion modulates passive head-up tilt induced cardiovascular responses**

*Andreas Roessler*

**Predicting pulsatile variations in finger arterial pressure using a novel cardiovascular system model**

*Aurelio de los Reyes V*

**Cardio-postural interactions: Wavelet analysis of gastrocnemius electromyographic activity and blood pressure variation with respect to postural sway during quiet stance**

*Andrew P. Blaber*

**Effects of mental challenge applied before passive head up tilt on orthostatic neurohormonal responses**

*Nandu Goswami*

## 09:00-10:30 **Session Xc - Oral Presentations**

LECTURE  
THEATRE 4

### *Tissue/cell damage and apoptosis*

Chair/Organizer: *Markus Ritter, Salzburg, Austria*

**The lysosomal pathway of apoptosis: A complex biological network**

*Veronika Stoka*

The non-gastric H<sup>+</sup>/K<sup>+</sup>-ATPase ATP12A exerts an anti-apoptotic effect on butyrate-treated myelomonocytic HL60 cells

*Sabine Schmidt*

The possible effects of topically administered carvacrol on physiological mechanisms in wound healing

*M. Yalçın Günal*

Apoptosis without karyorrhexis in microglia

*Barbara Klein*

Role of cell swelling-induced peptide secretion in ischemia-reperfusion injury and preconditioning

*Vladimír Štrbák*

09:00-10:30

## **Session Xd - Oral Presentations**

LECTURE  
THEATRE 5

### ***Neurophysiology and sensory system***

Chair/Organizer: *Marjan Rupnik, Maribor, Slovenia*

Nicotine protects against kainic acid induced hippocampal damage

*Vladimir Riljak*

Distinguishing between the sub- and superthreshold regime of neuronal firing

*Aleš Škorjanc*

Maturation and functional plasticity of cellular respiratory apparatus in flies' eyes

*Gregor Zupančič*

Improving effects of chronic melatonin treatment on 5-HT neurotransmission and spatial memory task in old rats

*Susana Esteban*

11:00-13:00

## **Session XIa - Symposium**

LECTURE  
THEATRE 1

### ***Gravitational Physiology***

Chairs/Organizers: *Helmut Hinghofer-Szalkay, Graz, Austria & Nandu Goswami, Graz, Austria*

Gravity, the hydrostatic indifference concept, and the heart

*Helmut Hinghofer-Szalkay*

**Cardiovascular responses to the upright posture**

*Neil H. Secher*

**Cardiovascular control, exercise and gravity**

*Dag Linnarsson*

**Neuroendocrine responses to orthostasis combined with other stress stimuli**

*Daniela Jezova*

11:00-13:00 **Session XIb - Symposium**

LECTURE  
THEATRE 2

***Osmoregulation, osmosensing and mechanotransduction***

Chair/Organizer:

*Markus Ritter, Salzburg, Austria*

**Ion and water channels involved in cell volume control: Regulation and physiological roles**

*Else Kay Hoffmann*

**The hypertonicity-induced cation channel (HICC) in human hepatocytes: Role in proliferation vs. apoptosis and molecular characterization**

*Frank Wehner*

**Osmosignaling in the liver**

*Dieter Häussinger*

**Kinetics of force-induced cell reorganization depends on microtubules and actin**

*Ralf Kemkemer*

11:00-13:00 **Session XIc - Symposium**

LECTURE  
THEATRE 3

***Physiology and pathophysiology of purinergic signalling***

Chair/Organizer:

*Elsa Fabbretti, Nova Gorica, Slovenia*

**Overview of the pathophysiology of purinergic signalling**

*Geoffrey Burnstock*

**ATP-mediated signalling in trigeminal neurons in a migraine animal model**

*Elsa Fabbretti*



Nucleotide receptors at the neuro-vascular interface

*Stefan Boehm*

Purinergic signaling in the pulmonary neuroepithelial body microenvironment unraveled by live cell imaging

*Dirk Adriaensen*

Extracellular ATP and P2 receptors in neurodegenerative diseases: P2X7 is an obligate component of microglia response to amyloid beta

*Francesco Di Virgilio*

11:00-13:00

## **Session XI d - Symposium**

LECTURE

THEATRE 4

***Pain: Role of glutamate and GABA metabotropic receptors***

Chairs/Organizers: *Marcella MOTTA, Milano, Italy & Valerio MAGNAGHI, Milano, Italy*

Transcriptional regulation of type-2 metabotropic glutamate receptors: A potential strategy for chronic pain treatment

*Ferdinando Nicoletti*

GABA<sub>B</sub> impairment in the dorsal horn of neuropathic rats: Possible roles for associated proteins

*Marc Landry*

Metabotropic GABA-B receptor-mediated effects in nociception

*Valerio Magnaghi*

Development of potential antihyperalgesic drugs targeting group III mGluRs

*Cyril Goudet*

14:00-15:30

## **Session XII**

POSTER AREA

MF

**Poster Session and Exhibition**

15:30-16:00

**FEPS Best Poster and Best Lecture Award**

LECTURE

THEATRE 3