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PS | PRE-SYMPOSIA



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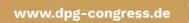
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Thursday, 19 September 2024, 9:00 - 10:30 | Lecture Hall C2

OS 01 | Contractile function

Chairs: Martina Krüger (Düsseldorf, Germany); Tilmann Volk (Erlangen, Germany)

| 9:00 | OS 01-01 | Impact of titin cleavage in vivo on cardiac tissue regeneration and function Paulina Hartmann (Muenster, Germany) |
|-------|----------|--|
| 9:15 | OS 01-02 | Comparison of the cardiac mitochondrial proteome of Göttingen minipigs to that of lean Ossabaw minipigs before manifestation of the metabolic syndrome Chantal Eickelmann (Essen, Germany) |
| 9:30 | OS 01-03 | Cannabinoids attenuate myotonic responses of mouse muscles via activation of cannabinoid receptor 1 Lennart Kasprack (Greifswald, Germany) |
| 9:45 | OS 01-04 | A novel approach for accessible or retrospective echocardiographic diastolic function assessment in mice Michael Marterstock (Dresden, Germany) |
| 10:00 | OS 01-05 | Transcriptional bursting could explain intercellular variability associated with hypertrophic cardiomyopathy induced by mutations in different sarcomeric proteins Ante Radocaj (Hannover, Germany) |
| 10:15 | OS 01-06 | In vivo titin cleavage shows graded effects on cardiac function, structure, and immune response Christine M. Loescher (Muenster, Germany) |

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Thursday, 19 September 2024, 9:00 - 10:30 | Lecture Hall B

OS 02 | Renal: Physiological and pathophysiological aspects

Chairs: Ioana Alesutan-Völkl (Linz, Austria); Christoph Korbmacher (Erlangen, Germany)

| 9:00 | OS 02-01 | Unveiling Nephron Segment-Specific Functions of NFAT5: Insights from Targeted Knockout Models Vera A. Kulow (Berlin, Germany) |
|-------|----------|--|
| 9:15 | OS 02-02 | Transcriptomic analysis suggests an important role of the transmembrane serine protease 2 in regulation of epithelial permeability in the distal nephron Florian Sure (Erlangen, Germany) |
| 9:30 | OS 02-03 | An atrial natriuretic peptide-mediated heart-adrenal axis prevents salt-responsive arterial hypertension Julia Sudnitsyna (Wuerzburg, Germany) |
| 9:45 | OS 02-04 | Pharmaceutical activation of soluble guanylate cyclase reduces acute kidney injury progression to chronic kidney disease Falk B. Lichtenberger (Berlin, Germany) |
| 10:00 | OS 02-05 | Effects of orally ingested microplastics on the structure and function of the kidney Hannah Triebel (Regensburg, Germany) |
| 10:15 | OS 02-06 | Tracking Ca2+ Dynamics in Pancreatic Tissue Slices, from NOD Mice to Human Islets Sandra Postic (Gothenburg, Sweden) |

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Thursday, 19 September 2024, 9:00 - 10:30 | Lecture Hall C1

S 01 | Non-canonical signaling and function of hemoglobin, nitric oxide and circulating blood-cells in cardiovascular pathophysiology

Miriam M. Cortese-Krott (Düsseldorf, Germany); Helmut R. Lieder (Essen, Germany) **Chairs:**

| 9:00 | S 01-01 | Nitrosation of CD36 regulates endothelial function and serum lipids Brant Isakson (Charlottesville, USA) |
|-------|---------|---|
| 9:22 | S 01-02 | Red blood cells and their role in cardioprotection Petra Kleinbongard (Essen, Germany) |
| 9:44 | S 01-03 | The ambivalent role of circulating immune cells during myocardial ischemia and reperfusion in myocardial injury or cardioprotection Florian Kahles (Aachen, Germany) |
| 10:06 | S 01-04 | Cardioprotective Effects of Platelets in Cardiovascular Disease Gemma Vilahur (Barcelona, Spain) |

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S 02 | A multitude of interactions: Unraveling Ion Channel Complexes

Chairs: Stefan Gründer (Aachen, Germany); Manuela Schmidt (Vienna, Austria)

| 9:00 | S 02-01 | Ion channel complexes in the context of pain Manuela Schmidt (Vienna, Austria) |
|-------|---------|--|
| 9:22 | S 02-02 | The sodium leak channel and friends:identifying protein partners of the NALCN complex. Samuel Usher (Copenhagen, Denmark) |
| 9:44 | S 02-03 | AMPA receptor complexes - not a kind of its own Uwe Schulte (Freiburg, Germany) |
| 10:06 | S 02-04 | A new auxiliary subunit associates with the extracellular domain of ASIC1a to control its surface expression. Dominik Wiemuth (Aachen, Germany) |



of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS2) Physiology











Thursday, 19 September 2024, 10:30 - 10:45 | Lecture Hall A, Lecture Hall B, Lecture Hall C1, Lecture Hall C2

Coffee Break

of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS2) Physiology











Thursday, 19 September 2024, 10:45 - 12:30 | Lecture Hall C1

OC | Opening & Award Ceremony

Chairs: Michael J.M. Fischer, Congress President (Vienna, Austria), Stefan Gründer, President of the DPG (Aachen, Germany)

Welcome Notes

Michael J.M. Fischer (Vienna, Austria) Stefan Gründer (Aachen, Germany), DPG Christine Peinelt (Bern, Siwtzerland), LS² Jakob Voelkl (Linz, Austria), APS

Honors awarded by the society

Badge of honor: Ulrich Pohl (Planegg-Martinsried, Germany) Laudatio: Ralf P. Brandes (Frankfurt/Main, Germany) Honorary membership: Thomas Jentsch (Berlin, Germany) Laudatio: Stefan Gründer (Aachen, Germany)

Paper of the Year 2023

Wolfgang Linke (Münster, Germany)

Dissertation Awards 2024

Wolfgang Linke (Münster, Germany)

Du Bois-Reymond Award

Stefan Gründer (Aachen, Germany) Laudatio: Jörg Geiger (Berlin, Germany) Laureate: Yangfan Peng (Berlin, Germany)

Adolf Fick Award

Friedrich Dolezalek (Gröbenzell, Germany) Laudatio: Andreas Draguhn (Heidelberg, Germany) Laureate: Ileana L. Hanganu-Opatz (Hamburg, Germany)

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Break (Lunch on own)



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PL 01 | Plenary Lecture: S. Knapp

Chairs: Michaela Kress (Innsbruck, Austria)

Presentations:

14:00 PL 01 Determinants of pulmonary immune homeostasis

Sylvia Knapp (Vienna, Austria)



of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS²) Physiology







Thursday, 19 September 2024, 14:45 - 15:15 | Lecture Hall C1

SL 01 | Special Lecture: A. Kurtz (EIC Pflügers Archiv)

Chairs: Carsten Wagner (Zurich, Switzerland)

Presentations:

14:45 SL 01 A researcher's and an editor's view on Pflügers Archiv - European Journal of Physiology

Armin Kurtz (Regensburg, Germany)



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Thursday, 19 September 2024, 15:25 - 16:55 | Lecture Hall C2

OS 03 | Ion channels

Chairs: Marcus Schewe (Kiel, Germany); Niels Decher (Marburg, Germany)

| 15: | 25 OS 03-01 | Regulation of selectivity filter gating in the model system of minimal viral potassium channels Indra Schroeder (Jena, Germany) |
|------|-------------|---|
| 15: | 40 OS 03-02 | Dissecting the up and down state of TREK K_{2P} channels by computational and functional studies Marianne A. Musinszki (Kiel, Germany) |
| 15: | 55 OS 03-03 | Regulation of TRPC3 by PIP ₂ and DAG Thomas Stockner (Vienna, Austria) |
| 16: | 10 OS 03-04 | Structural Insights into Selectivity and Activation Mechanism of LRRC8 Channels Maya M. Polovitskaya (Berlin, Germany) |
| 16:: | 25 OS 03-05 | Hearing loss mutations in human P2X2 receptor channels Christian Sattler (Jena, Germany) |
| 16: | 40 OS 03-06 | The pathophysiological effects of NMDA receptor activation in pancreatic β -cells can be mitigated by GluN2B antagonists Héctor Noguera Hurtado (Münster, Germany) |

of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS²) Physiology









Thursday, 19 September 2024, 15:25 - 16:55 | Lecture Hall C1

S 03 | Inflammatory processes contributing to pathological pain perception

Chairs: Michael Fischer (Vienna, Austria); Michaela Kress (Innsbruck, Austria)

| 15:25 | S 03-01 | The role of Interleukin 4 for shaping human nociceptor morphology and function Michaela Kress (Innsbruck, Austria) |
|-------|---------|---|
| 15:55 | S 03-02 | The role of silent nociceptors in inflammatory pain Stefan G. Lechner (Hamburg, Germany) |
| 16:25 | S 03-03 | A human skin lipopolysaccharide inflammation model Michael J.M. Fischer (Vienna, Austria) |

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Thursday, 19 September 2024, 15:25 - 16:55 | Lecture Hall A

S 04 | Regulation and dysregulation of mineral balance in health and disease

Chairs: Jakob Völkl (Linz, Austria); Daniela Egli (Zurich, Switzerland)

| 15:25 | S 04-01 | Calciprotein particles: sand in the physiological gears? Jan-Luuk Hillebrands (Groningen, Netherlands) |
|-------|---------|---|
| 15:47 | S 04-02 | Dysregulation of FGF23, klotho and phosphate - sticks and stones breaking the heart? Reinhold G. Erben (Vienna, Austria) |
| 16:09 | S 04-03 | FGF23: a pro-inflammatory wolf in a phosphaturic sheep skin Daniela Egli (Zurich, Switzerland) |
| 16:31 | S 04-04 | Vascular calcification: how tubes turn to pipes and does it matter at all? loana Alesutan (Linz, Austria) |



of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS²) Physiology











Thursday, 19 September 2024, 15:25 - 16:55 | Lecture Hall B

S 05 | Muscle Matters: Innovative Perspectives on Skeletal Muscle Health and Disease

Chairs: Martina Krüger (Düsseldorf, Germany); Frank Suhr (Bayreuth, Germany)

| 15:25 | S 05-01 | Novel insights in ageing sarcopenia Marco Sandri (padova, Italy) |
|-------|---------|--|
| 15:47 | S 05-02 | Muscle disuse and unloading. Single fiber proteomics and novel spatial approaches Marta Murgia (Padova, Italy) |
| 16:09 | S 05-03 | The mechanistic underpinnings of muscle plasticity in acute exercise and chronic training Christoph Handschin (Basel, Switzerland) |
| 16:31 | S 05-04 | Super-relaxed myosins contribute to respiratory muscle hibernation in mechanically ventilated patients Coen Ottenheijm (Amsterdam, Netherlands) |

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Thursday, 19 September 2024, 16:55 - 18:55 | Aula, Foyer (Auditorium Centre)

Poster Session A

of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS²) Physiology









Thursday, 19 September 2024, 16:55 - 18:55 | Aula, Foyer (Auditorium Centre)

A 01 | Cardiac calcium and disease models

Chairs: Susanne Rohrbach (Lollar, Germany); Wolfgang Linke (Münster, Germany)

- A 01-01 Functional and downstream signaling effects of protein kinase C (PKC) activation on rabbit and human myocardium in vitro **Pooja Joshi** (Erlangen, Germany)
- A 01-02 Acute effects of tunicamycin on cardiac calcium regulation and signaling pathways associated with endoplasmic/sarcoplasmic reticulum stress **Ahmad N. Nasri** (Marburg, Germany)
- A 01-03 Cardiac glia among the autonomic innervation: characterization of myelinating and non-myelinating Schwann cells in the heart **Yu-Wen Dai** (Düsseldorf, Germany)
- A 01-04 Cardiac function of the living mouse after specific, graded cleavage of cardiac titin **Johanna K. Freundt** (Muenster, Germany)
- A 01-05 CHARGE-BALANCING OPTIMIZES ELECTROCHEMICAL COMPATIBILITY OF BIPHASIC TISSUE STIMULATION Petra Kameritsch (Munich, Germany)
- A 01-06 Optogenetic control of G_i signaling using long wavelength-sensitive opsin enables induction of atrial fibrillation in mice **Caspar R. Timpe** (Bonn, Germany)











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- Investigating Electrophysiological Features of Right Ventricular Tissue Slices from Patients with Tetralogy of Fallot A 01-07 Wesley D. Jones (Freiburg, Germany)
- Automated patch-clamp assessment of cardiac chamber-specific electrophysiology in induced pluripotent stem cell derived cardiomyocytes A 01-08 Fitzwilliam Seibertz (Munich, Germany)
- TISSUE INTEGRATION OF STEM CELL-DERIVED CARDIAC PROGENITOR CELLS: IN VITRO STUDIES IN LONG-TERM CULTIVATED SLICES OF HUMAN FAILING MYOCARDIUM A 01-09 Zhengwu Sun (Munich, Germany)
- Contractile properties of human induced pluripotent stem cell-derived cardiomyocytes can be altered by cryopreservation A 01-10 Kathrin Kowalski (Hannover, Germany)
- Impact of Replating on Stem Cell-Derived Cardiomyocyte Function and Myosin Heavy Chain Expression A 01-11 Felix Osten (Hannover, Germany)

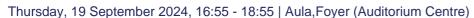
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A 02 | Ion channels (voltage-gated)

Jochen Roeper (Frankfurt, Germany); Bernd Fakler (Freiburg, Germany) Chairs:

- Electrochemical coupling at the plasma membrane by mammalian voltage sensitive phosphatase A 02-01 Vijay Renigunta (Marburg, Germany)
- A 02-02 Single-channel conductance of mouse pacemaker channels mHCN1 to mHCN4 is tiny and specific Klaus Benndorf (Jena, Germany)
- Modification of human Kv4 channels by KChIP1 splice variants A 02-03 Wuyou Cao (Hamburg, Germany)
- Gating-modifying CACNA1D (Cav1.3) missense variants lead to diverse clinical phenotypes A 02-04 Horia C. Hermenean (Innsbruck, Austria)
- The biphasic effect of hydrogen peroxide on the voltage gated K⁺-channel Kv1.5 expressed in Xenopus oocytes A 02-05 Ornella Yamdjeu (Giessen, Germany)
- Functional characterization of KCND2 missense variants affecting the Kv4.2 pore domain A 02-06 Fabian Pascal Schönewald (Hamburg, Germany)











| A 02-07 | Rajeshwari Bisen (Marburg, Germany) |
|---------|--|
| A 02-08 | Functional characterization of <i>KCND1</i> variants identifies new disease gene Tassja Kalm (Hamburg, Germany) |

- Light-induced action potentials and stem cell-derived sensory neurons: an automated patch clamp investigation A 02-09 Kefan Yang (München, Germany)
- Student performance in a practical Physiology course after a preparatory asynchronous online teaching module: effect of an optional pre-course online test offering bonus scores A 02-10 Judith Lechner (Innsbruck, Austria)

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Thursday, 19 September 2024, 16:55 - 18:55 | Aula, Foyer (Auditorium Centre)

A 03 | Neuroscience (cellular)

Thomas Mittmann (Mainz, Germany); Erhard Wischmeyer (Bielefeld, Germany) Chairs:

| A 03-01 | Phospho-mimetic mutant of the AMPAR-associated protein Porcupine reduces Wnt5a secretion and neuronal outgrowth |
|---------|---|
| | Naomi Mölders (Düsseldorf, Germany) |
| V 03-03 | Environmental Enrichment change lateral inhibition in the hippocampus |

- Environmental Enrichment shapes lateral inhibition in the hippocampus Stylianos Kouvaros (Basel, Switzerland)
- A 03-03 Morphotype-specific calcium signaling in human microglia Sonja Nevelchuk (Tübingen, Germany)
- Relaxin' cortical circuits: understanding the effect of relaxin in the mouse cortex A 03-04 Sadat Hodzic (München, Germany)
- SOM kind of neuromodulator: Cell-type specific effects of somatostatin in the cortex A 03-05 Therese Riedemann (Salzburg, Austria)
- Intrinsic rebound burst excitability is unique among dopamine midbrain neurons for those projecting to the dorso-lateral striatum A 03-06 Strahinja Stojanovic (Frankfurt, Germany)

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A 03-07

A 03-13

A 03-14





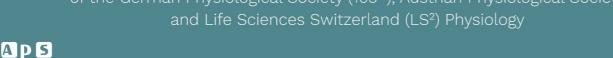
Michael D. Hadler (Berlin, Germany)

Tobias Strasdeit (Duesseldorf, Germany)

Nikolaj Klöcker (Düsseldorf, Germany)

A novel auxiliary subunit fine-tunes TARPed AMPA receptors

Characterization of a Novel Enhancer of AMPA Receptor Fidelity



Autophagosomal dysfunction elicits neurodegenerative tauopathy in biallelic SPRED2 loss-of-function mouse models



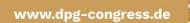
| | Sina Gredy (Wuerzburg, Germany) |
|---------|---|
| A 03-08 | Projection-specific uni-directional organisation of dendritic dopamine transmission in the midbrain Niklas Hammer (Frankfurt am Main, Germany) |
| A 03-09 | Establishment of a human induced pluripotent stem cell-based <i>in vitro</i> model for the investigation of sex-specific differences in migraine pathophysiology Beatrice A. Nossek (Bielefeld, Germany) |
| A 03-10 | Action potential-evoked Ca ²⁺ transients in basal dendrites of rat olfactory bulb granule cells Manon Leygnier (Regensburg, Germany) |
| A 03-11 | Membrane potential UP/DOWN-states enhance synaptic transmission in the human neocortex Franz X. Mittermaier (Berlin, Germany) |
| A 03-12 | Exploring cell-to-network plasticity of parvalbumin interneurons in the rodent and human cortex |

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Thursday, 19 September 2024, 16:55 - 18:55 | Aula, Foyer (Auditorium Centre)

A 04 | Metabolism

Chairs: Mauro Siragusa (Frankfurt, Germany); Stephan Speier (Dresden, Germany)

- A 04-01 Investigating the cellular crosstalk between the endocrine and exocrine pancreas **Christian M. Cohrs** (Dresden, Germany)
- A 04-02 Calory restricted mice show primarily IP3R related calcium release supported by elevated cAMP levels **Johannes U. Pfabe** (Vienna, Austria)
- A 04-03 Assessing Acute Pancreatitis Severity: Extent of Necrosis as a Novel Approach in Studies Employing Live Cell Imaging **Polona Kova?i?** (Maribor, Slovenia)
- A 04-04 Hyperlipidemia *per se* does not induce β-cell lipotoxicity in mouse and human islets *in vivo* **Chunguang Chen** (Dresden, Germany)
- A 04-05 Navigating Technical Considerations and the Interpretation of Functional Connectivity Analysis in Pancreatic Islets **Marko Gosak** (Maribor, Slovenia)
- A 04-06 FT50 EXTRACT MITIGATES METABOLIC SYNDROME AND ENHANCES GLUCOSE TOLERANCE IN WESTERN DIET-FED MICE Nika Polšak (Maribor, Slovenia)

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| A 04-07 | The transcription factor WT1 inhibits white adipose tissue browning via activation of the WNT signaling pathway |
|---------|---|
| | Helena Landstorfer (Berlin, Germany) |

- Comparison of Glucose-Stimulated Calcium Responses in Non-Diabetic and Diabetic Human Pancreatic Islets A 04-08 Viljem Pohorec (Maribor, Slovenia)
- Impact of Dietary Protein Variation on Human Metabolome: Insights from NMR-based Analysis A 04-09 Sandra Haupt (Kulmbach, Germany)
- Reversal of diet-induced beta cell dysfunction of type 2 diabetes with caloric restriction A 04-10 Jan Kopecky (Maribor, Slovenia)
- Investigating the impact of GLP-1 receptor agonists on beta cell calcium dynamics A 04-11 Eva Paradiž Leitgeb (Maribor, Slovenia)
- The role of sEH deletion on hepatic lipid metabolism and lipid droplet dynamics and its effect on cardiovascular function under a fat and carbohydrate rich diet A 04-12 Timo Frömel (Frankfurt, Germany)

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Thursday, 19 September 2024, 16:55 - 18:55 | Aula, Foyer (Auditorium Centre)

A 05 | Renal Pathophysiology

Chairs: Heimo Ehmke (Hamburg, Germany); Ralf Mrowka (Jena, Germany)

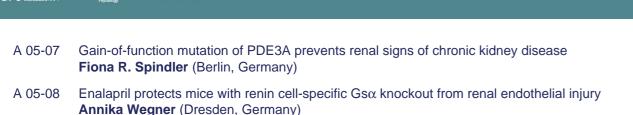
- Do different expression patterns of prolyl-4-hydroxylases or different behavior of fibroblast subpopulations explain the lack of erythropoietin induction in medullary fibroblasts? A 05-01 Bettina K.M. Firmke (Regensburg, Germany)
- A 05-02 Do differences in the zonal expression or stabilization of the hypoxia-inducible transcription factor 2 explain the lack of erythropoietin induction in medullary fibroblasts? Katharina A.-E. Broeker (Regensburg, Germanv)
- Melanocortin Receptor Activation in Kidneys A 05-03 Johannes Jägers (Essen, Germany)
- Endothelial ANP/GC-A signaling is critically involved in acute ANP-induced stimulation of natriuresis A 05-04 Elena-Sofia HeinI (Regensburg, Germany)
- Zinc is associated with serum calcification propensity in chronic kidney disease A 05-05 Azmat Sohail (Linz, Austria)
- Inhibition of sphingosine kinase 1 augments osteogenic signaling and calcification of vascular smooth muscle cells A 05-06 Mehdi Razazian (Linz, Austria)

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- P2Y6-signaling in renal fibrosis A 05-09 Anna-Lena Forst (Regensburg, Germany)
- Cytoskeletal GTPase septin expression and recruitment to damaged mitochondria by cadmium in the kidney A 05-10 Nadiya Romanova (Bielefeld, Germany)
- Podocyte-derived vesicles as urinary markers of kidney function A 05-11 Luisa Schnobrich (Regensburg, Germany)
- Can podocytic extracellular vesicles affect the metabolism of tubular epithelial cells? A 05-12 Anna Lieven (Essen, Germany)
- A 05-13 Revealing Molecular Insights into New Claudin-10b Mutations in HELIX Syndrome Patients Markus Bleich (Kiel, Germany)
- The urine acid/base score and renal disease progression: evidence from pre-clinical animal models A 05-14 Jesper F. Andersen (Aarhus C, Denmark)
- Discrimination of chronic vs. end-stage kidney disease requiring hemodialysis based on untargeted serum proteomics A 05-15 Oliver Drews (Linz, Austria)



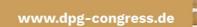
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Thursday, 19 September 2024, 16:55 - 18:55 | Aula, Foyer (Auditorium Centre)

A 06 | Endothelial cell activation

Chairs: Rudolf Schubert (Augsburg, Germany); Miriam M. Cortese-Krott (Düsseldorf, Germany)

- A 06-01 The endothelial important IncRNA SMANTIS interacts with RUNX1 in monocytes Lisa M. Weiss (Frankfurt, Germany)
- A 06-02 The inflammation-regulated microprotein miP-FERMT3 induces cellular senescence and regulates inflammatory processes in human endothelial cells **Manav Raheja** (Frankfurt am main, Germany)
- A 06-03 Influence of Calcineurin on Vascular microRNA-Expression and Function **Sebastian Matern** (Halle (Saale), Germany)
- A 06-04 Aging increases hypoxia-induced endothelial permeability and blood-brain barrier dysfunction by upregulating arginase-II **Xin Cheng** (Fribourg, Switzerland)
- A 06-05 Long non-coding RNAs direct the SWI/SNF complex to endothelial cell-specific enhancers **James A. Oo** (Frankfurt am Main, Germany)
- A 06-06 Human endothelial cell microproteins contribute to the MHC peptide repertoire **Matteo Cartura** (Frankfurt at main, Germany)

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A 06-07





Barbora Belakova (Vienna, Austria)



Loss of SHP-2 phosphatase activity augments the adhesive phenotype of insulin resistant endothelial cells



| | Hanna Mannell (Garching bei München, Germany) |
|---------|---|
| A 06-08 | Identification of proteins associated with global and specific RNA-DNA triplexes Julia Stötzel (Frankfurt am Main, Germany) |
| A 06-09 | Amlodipine impacts on endothelial nanomechanics and function Benedikt Fels (Lübeck, Germany) |
| A 06-10 | Effects of Chronic Inflammatory Activation of Endothelial Cells at Normal Lipoprotein and Cholesterol Levels In Vivo and In Vitro |

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Friday, 20 September 2024, 8:00 - 9:00 | Lecture Hall C2

GA | APS General Assembly

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Friday, 20 September 2024, 8:00 - 9:30 | Lecture Hall C1

GA | DPG General Assembly

of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS²) Physiology









Friday, 20 September 2024, 9:30 - 11:00 | Lecture Hall C2

OS 04 | Neuroscience

Chairs: Evangelia Pollali (Heidelberg, Germany); Martin Both (Heidelberg, Germany)

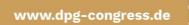
| 1 163611 | lations. | |
|----------|----------|--|
| 9:30 | OS 04-01 | Reciprocal firing rate changes of dopamine substantia nigra neurons associated with self-paced movement initiation and termination Daniela Schenkel (Frankfurt am Main, Germany) |
| 9:45 | OS 04-02 | Intradermal injection-based pain models Felix J. Resch (Vienna, Austria) |
| 10:00 | OS 04-03 | The network-wide impact of pallidal deep brain stimulation in generalized dystonia Denise Franz (Rostock, Germany) |
| 10:15 | OS 04-04 | Serotonin acts pre- and postsynaptically to differentially modulate glutamatergic and GABAergic synaptic transmission in the anterior cingulate cortex Sadat Hodzic (München, Germany) |
| 10:30 | OS 04-05 | Enhanced <i>in vivo</i> firing of substantia nigra dopamine neurons projecting to the dorsal striatum in the $Df(16)A^{+/-}$ mouse model of schizophrenia Solmaz Bikas (Frankfurt am Main, Germany) |
| 10:45 | OS 04-06 | Modulation of cold pain by inhibition of TRPM8, TRPA1, NaV1.7 and NaV1.8 in humans Stefan Heber (Vienna, Austria) |

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Friday, 20 September 2024, 9:30 - 11:00 | Lecture Hall B

OS 05 | Cardiac intervention and arrhythmia

Chairs: Philipp Sasse (Bonn, Germany); Tobias Brügmann (Göttingen, Germany)

| 9:30 | OS 05-01 | IGF-1/AKT kinase-mediated phosphorylation of HCN4 channels increases their cell surface expression Nadine Erlenhardt (Düsseldorf, Germany) |
|-------|----------|---|
| 9:45 | OS 05-02 | Paroxysmal atrial fibrillation under prolonged JDP2 overexpression Gerhild Euler (Gießen, Germany) |
| 10:00 | OS 05-03 | Tachyarrhythmic pacing in long-term culture of right atrial appendage pectinate muscles from patients in sinus rhythm induces atrial fibrillation-like remodeling Benedikt Pfeilschifter (Erlangen, Germany) |
| 10:15 | OS 05-04 | Optogenetic current clamp in the intact heart to quantify cardiac excitability and explain cardiac arrhythmia initiation and protection Judith S. Langen (Bonn, Germany) |
| 10:30 | OS 05-05 | Vago-splenic signal transduction in the release of cardioprotective factors by remote ischemic conditioning and auricular tragus stimulation in humans Helmut R. Lieder (Essen, Germany) |
| 10:45 | OS 05-06 | Neuro-glial interaction in the heart Katharina Scherschel (Düsseldorf, Germany) |

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Friday, 20 September 2024, 9:30 - 11:00 | Lecture Hall C1

S 06 | New Challenges in Physiological Teaching

Rudolf Schubert (Augsburg, Germany); Julia Eckel (Mannheim, Germany) **Chairs:**

| 9:30 | S 06-01 | Teaching through the backdoor: Smartwatch-based cardiovascular measurements in the physiology laboratory Robert Patejdl (Erfurt, Germany) |
|-------|---------|--|
| 9:52 | S 06-02 | Team-based Learning: Does a permanent team matter? Michael J.M. Fischer (Vienna, Austria) |
| 10:14 | S 06-03 | Role of physiology in new non-(dental) medical degree programs Alexander P. Schwoerer (Hamburg, Germany) |
| 10:36 | S 06-04 | Consideration of individual differences when comparing face-to-face lectures and asynchronous online lectures in physiology Julia Eckel (Mannheim, Germany) |

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S 07 | New Trends in Studying Islet Cells in Health and Disease

Chairs: Andraž Stožer (Maribor, Slovenia); Marjan Slak Rupnik (Vienna, Austria)

| 9:30 | S 07-01 | Caloric Restriction Reverses T2DM: Lessons from a Mouse Model Maša Skelin Klemen (Maribor, Slovenia) |
|-------|---------|--|
| 10:00 | S 07-02 | Alpha cell spotlight: Insights into their function and role in health and disease. Julia Panzer (Los Angeles, USA) |
| 10:30 | S 07-03 | Single-cell quantification of β -cell secretory capacity and transcriptome in health and diabetes Joan Camunas-Soler (Gothenburg, Sweden) |



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Friday, 20 September 2024, 11:00 - 13:00 | Aula, Foyer (Auditorium Centre)

Poster Session B

of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS²) Physiology









Friday, 20 September 2024, 11:00 - 13:00 | Aula, Foyer (Auditorium Centre)

B 01 | Heart failure mechanisms

Chairs: Armin Just (Freiburg i. Br., Germany); Petra Kleinbongard (Essen, Germany)

- B 01-01 Cardiac myofilament properties in a mouse model with a dilated cardiomyopathy-causing myosin mutation **Sophia Kiemann** (Düsseldorf, Germany)
- B 01-02 Potential role of Proenkephalin (PENK) in right heart failure **Ling Li** (Giessen, Germany)
- B 01-03 Cardiac conduction velocity increases by increased heart rate or optogenetic-induced depolarization due to a novel distance-to-threshold effect **Judith N. Weidtmann** (Bonn, Germany)
- B 01-04 Deletion of MAO-B using ROSACreERT2 mice increased weight loss and mortality rate **Jacqueline Heger** (Giessen, Germany)
- B 01-05 Leveraging cell-penetrating peptides to cleave titin in intact cardiac muscle tissue **Annika J. Klotz** (Muenster, Germany)
- B 01-06 Protein Quality Control and Titin turnover during dedifferentiation and redifferentiation of cultured adult rat cardiomyocytes **Sebastian Kötter** (Düsseldorf, Germany)

of the German Physiological Society (103rd), Austrian Physiological Society







| B 01-07 | Not so different after all: temperature dependence of actin filament sliding along cardiac alpha- and beta-myosin molecules Tim Scholz (Hannover, Germany) |
|---------|---|
| B 01-08 | Age-dependent changes in contractile properties and protein quality control in a mouse model with hypertrophic cardiomyopathy Patricia Kliem (Düsseldorf, Germany) |
| B 01-09 | Longitudinal assessment of in vivo and ex vivo rodent cardiac functions in conventional and experimental irradiation Marta E.S. Böttcher (Rostock, Germany) |
| B 01-10 | Deep learning instance segmentation model for quantification of infarct size in pigs with myocardial ischemia/reperfusion Felix Braczko (Essen, Germany) |
| B 01-11 | Absence of an inflammatory proteomic signature in HFpEF versus HFrEF human hearts Franziska Koser (Münster, Germany) |
| B 01-12 | Dissecting the functions of multiple interactions of STAC3 in skeletal muscle excitation-contraction coupling Wietske E. Tuinte (Innsbruck, Austria) |
| B 01-13 | ERC1 enhances skeletal muscle excitation-contraction coupling Marta Campiglio (Innsbruck, Austria) |

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Friday, 20 September 2024, 11:00 - 13:00 | Aula, Foyer (Auditorium Centre)

B 02 | Ion channels (epithelia and other systems)

Chairs: Markus Bleich (Kiel, Germany); Nikolaj Klöcker (Düsseldorf, Germany)

| B 02-01 | Heteromeric polycystin-2/polycystin-1 and homomeric polycystin-2 ion channels demonstrate distinct properties in a heterologous expression system |
|---------|---|
| | Alexandr V. Ilyaskin (Erlangen, Germany) |

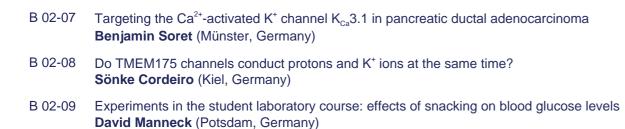
- B 02-02 Comparing electrophysiological data in healthy and CF primary human respiratory epithelia with morphological conditions Roshani Narayan Singh (Muenster, Germany)
- Analysis of the transport mechanism of SLC26A6 B 02-03 Annalisa Questino (Marburg, Germany)
- Zinc blocks the HCNL1 proton channel B 02-04 Makoto F. Kuwabara (Marburg, Germany)
- p53 regulates TMEM206 in a p21-dependent manner and controls acid-induced cell death in HCT116 colorectal cancer cells B 02-05 Korollus Melek (Bern, Switzerland)
- The relationship between extracellular and intracellular pH in glioblastoma cancer stem cells influence of acid transporters B 02-06 Jan Münzner (Aachen, Germany)

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Friday, 20 September 2024, 11:00 - 13:00 | Aula, Foyer (Auditorium Centre)

B 03 | Ion channels (sensory and other systems)

Chairs: Dominik Oliver (Marburg, Germany); Michaela Kress (Innsbruck, Austria)

| B 03-01 | Pathophysiology of mutations of a cation channel of the transient receptor potential superfamily found in patients with primary aldosteronism |
|---------|---|
| | Sascha Bandulik (Regensburg, Germany) |

- B 03-02 Distinct mechanisms of inhibition in human TWIK-Related Spinal Cord K+ (hTRESK) channels **Anthony Ogwo** (Kiel, Germany)
- B 03-03 TWIK-related spinal cord potassium (TRESK) channel conductance and action potential frequency are diminished by ceramide synthase 1 and C18:0-ceramide Oliver Dräger (Bielefeld, Germany)
- B 03-04 Oxidative environment modulates TRPM8 **Gabor Tajti** (Wien, Austria)
- B 03-05 Hyperforin, an activator of TRPC6 channels, elicits biphasic effects on contractility of adult rat cardiomyocytes **David Königstein** (Marburg, Germany)
- B 03-06 Investigation of TRPM4 in cancer hallmark functions in 2D & 3D colorectal cancer models Irida Papapostolou (Bern, Switzerland)



B 03-07





Júlia Castro-Marsal (Marburg, Germany)

Unraveling the selectivity of ionic pathways of TRPM3 channel isoforms



| B 03-08 | Human TRPA1 single nucleotide polymorphisms Cosmin I. Ciotu (Vienna, Austria) |
|---------|--|
| B 03-09 | Modulation of Acid-Sensing Ion Channel 3 by the thyroid hormone T3 Lu Qin (Aachen, Germany) |
| B 03-10 | Piezo1 as protector in endothelial stiffening and vascular inflammation Johanna-Theres Borutta (Luebeck, Germany) |
| B 03-11 | The MedEdCloud®: A cooperation for quality-assured digital media Stefan Titz (Heidelberg, Germany) |
| B 03-12 | Thermal hypoalgesia as a marker for diabetic neuropathy in larval zebrafish – TRPV1-dependent nociception as a model to study loss of small fiber function in diabetes Wolfgang Greffrath (Mannheim, Germany) |

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Friday, 20 September 2024, 11:00 - 13:00 | Aula, Foyer (Auditorium Centre)

B 04 | Blood and hypoxia

Chairs: Roland Wenger (Zürich, Switzerland); Holger Scholz (Berlin, Germany)

- Propofol effects hypoxia-inducible factor signaling in human leukocytes under physiological oxygen exposure B 04-01 Jessica Adam (Essen, Germany)
- B 04-02 Bone morphogenetic protein 9 induces hypoxia-inducible factor-1α accumulation in human leukocytes Isabel Ruf (Essen, Germany)
- B 04-03 Reduced vacuolar ATPase protects mice from Friend virus infection – an unintended but instructive effect in Hif-2a^{ff} mice Sandra Winning (Essen, Germany)
- The potential role of metabolic dysregulation as an early pathophysiological mechanism in the context of age-related macular degeneration B 04-04 **Orbel Terosian** (Essen, Germany)
- Xenotopic expression of alternative oxidase challenges disease paradigms but also reveals potential hazards for its use in humans B 04-05 Marten Szibor (Tampere, Finland)
- Multi-modal regulation of the ciliogenesis-associated function of androglobin B 04-06 Antonia Herwig (Fribourg, Switzerland)

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Automated blood cell recognition and morphological quantifications: Al-based algorithm with an explainable output B 04-08 Manuel A. Campos Medina (Vienna, Austria)

Nuclear actin shaping the transcriptional response to hypoxia parallel to the HIF pathway B 04-09 **Anke Zieseniss** (Göttingen, Germany)



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Friday, 20 September 2024, 11:00 - 13:00 | Aula, Foyer (Auditorium Centre)

B 05 | Vascular pathophysiology

Nikola R. Lazarov (Varna, Bulgaria)

Ürün Ukan (Frankfurt am Main, Germany)

Chairs: Jörg Heineke (Mannheim, Germany); Markus Sperandio (München, Germany)

Presentations:

B 05-06

| B 05-01 | High density lipoprotein - bile acid conjugates a synergistic interaction restoring endothelial function Jürgen Gindlhuber (Graz, Austria) |
|---------|---|
| B 05-02 | RyR2 sensitivity to luminal [Ca²+] and its implications for elementary calcium signaling in arterial vascular smooth muscle cells Daniele Teixeira Alves (Greifswald, Germany) |
| B 05-03 | Elastic and plastic behaviour of ex vivo abdominal aortic walls and aneurysms Fabian Haunstetter (Augsburg, Germany) |
| B 05-04 | Critical role of p38 MAPK – NFAT5 – SGK1 signaling in vascular smooth muscle cell calcification Mehdi Razazian (Linz, Austria) |
| B 05-05 | Caldesmon expression determines pre-glomerular vascular reactivity and serves as a marker for vascular aging |

Impact of Secreted modular calcium binding protein (SMOC) 1 on foam cell formation and atherosclerosis development

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| Effect of calcineurin (PPP3CB) on basal and AngII-induced renal alterations Alexander Nolze (Halle (Saale), Germany) |
|--|
| C-type natriuretic peptide/cyclic GMP signaling counter-regulates metabolic remodelling and hyperproliferation of lung pericytes from patients with Pulmonary Hypertension Swati Dabral (Wuerzburg, Germany) |

From physiological research to rational effective therapy of small vessel disease and tissue hypoxia. B 05-09 Elfriede Leniger-Follert (Hagen, Germany)

The endocannabinoid anandamide mediates anti-inflammatory effects through activation of NR4A nuclear receptors B 05-10 **Tom Teichmann** (Frankfurt, Germany)

of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS²) Physiology









Friday, 20 September 2024, 11:00 - 13:00 | Aula, Foyer (Auditorium Centre)

B 06 | Control of gene expression & signalling

Chairs: Daniela Wenzel (Bochum, Germany); Yoshiyuki Henning (Essen, Germany)

| B 06-01 | Non-coding genetic variation contributes to cardiovascular physiology and pathology via disrupted RNA:DNA:DNA triple helix formation |
|---------|--|
| | Timothy Warwick (Frankfurt am Main, Germany) |

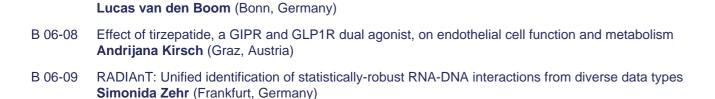
- B 06-02 Identification of Toll-like Receptor Interactions **Ralf Mrowka** (Jena, Germany)
- B 06-03 Eplerenone reduces Cirrhosis associated changes of hepatocyte Glucose and Lipid Metabolism **Barbara Schreier** (Halle, Germany)
- B 06-04 Impact of Nitric Oxide on Mineralocorticoid Receptor Signaling **Arooj Fatima** (Halle, Germany)
- B 06-05 Characterization of a high affinity fluorescent phosphatidylinositol 4,5-bisphosphate (PI(4,5)P₂) probe **Christian R. Halaszovich** (Marburg, Germany)
- B 06-06 Interactions of Quinone Derivates with Human Organic Cation Transporters 1-3 and Plasma Membrane Monoamine Transporter: Implications for Antimalaria Drug Pharmacokinetics **Thomas J.F. Angenoorth** (Vienna, Austria)

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B 06-07





Pericellular potassium gradients reported by a genetically encoded extracellular indicator



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Robert Labes (Berlin, Germany)



Friday, 20 September 2024, 11:00 - 13:00 | Aula, Foyer (Auditorium Centre)

B 07 | Tumorphysiology

Ivan Bogeski (Göttingen, Germany); Wing-Kee Lee (Bielefeld, Germany) Chairs:

Presentations:

| B 07-01 | The acidic tumor microenvironment hampers tumor cell proliferation via Ca ²⁺ signaling Anne Riemann (Halle (Saale), Germany) |
|---------|---|
| B 07-02 | Interaction of Connexin 43 with SHP-2 controls focal adhesion turnover during cell migration Kristin Pogoda (Garching bei München, Germany) |
| B 07-03 | NoxO1- a novel regulator of EGFR signaling and trafficking Maureen Hebchen (Frankfurt am Main, Germany) |
| B 07-04 | Deletion of the deubiquitinase OTUB1 affects AKT-dependent signaling Nina Oechsler (Greifswald, Germany) |
| B 07-05 | 2,3-Bisphosphoglycerate mutase (BPGM) expression in clear cell renal carcinoma cells supports cellular resistance. |

Characterization of the novel Heat Shock Protein 90 Inhibitor 246TMP-3SF5 as potential new treatment option for hepatocellular carcinoma B 07-06 Alessandra Viperino (Berlin, Germany)











| B 07-07 | Orai1 mediates collagen release and ECM deposition from pancreatic stellate cells in pancreatic cancer |
|---------|--|
| | Zoltán Peth? (Münster, Germany) |

- B 07-08 Establishing a ruminal 3D cell culture model **Friederike Stumpff** (Potsdam, Germany)
- B 07-09 NHE1, NHE3 and NHE8 cooperatively modulate migration of single colorectal carcinoma (HT29-MTX) cells in the presence and absence of HCO₃ Christian Stock (Hannover, Germany)
- B 07-10 K_{ca}3.1 channels regulate processes underlying metastasis of non-small-cell lung cancer cells by modulating cellular mechanics. **Dominika Ciechanska** (Münster, Germany)

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Friday, 20 September 2024, 13:00 - 14:00 | Lecture Hall A, Lecture Hall B, Lecture Hall C1, Lecture Hall C2

Break (Lunch on own)



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Friday, 20 September 2024, 14:00 - 14:45 | Lecture Hall C1

PL 02 | Plenary Lecture: G. Klambauer

Chairs: Michael Fischer (Vienna, Austria)

Presentations:

14:00 PL 02 Large language models and artificial intelligence in medicine and healthcare

Günter Klambauer (Linz, Austria)



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Friday, 20 September 2024, 14:55 - 16:25 | Lecture Hall B

OS 06 | Best Abstract Competition

Chairs: Stefan Gründer (Aachen, Germany); Michael Fischer (Wien, Austria); Wolfgang Linke (Münster, Germany)

| 14:55 | OS 06-01 | Downstream activation of K_{ca} channels as amplifiers of TRPV4-mediated pulmonary edema formation Laura Michalick (Berlin, Germany) |
|-------|----------|---|
| 15:10 | OS 06-02 | Differential K _v 4 channel functions among projection-defined dopamine neurons of the ventral tegmental area Marle Jahnke (Frankfurt am Main, Germany) |
| 15:25 | OS 06-03 | Identification of new gain-of-function variants located in the erythropoietin gene locus resulting in hereditary polycythemia Darko Maric* (Fribourg, Switzerland) |
| 15:40 | OS 06-04 | The Calcium Sensing Receptor in the Thick Ascending Limb regulates paracellular calcium permeability Catarina Quintanova (Kiel, Germany) |
| 15:55 | OS 06-05 | Secretin: a novel modulator of GFR and diuresis Peder Berg (Aarhus, Denmark) |
| 16:10 | OS 06-06 | Muscle Ankyrin Repeat Protein 1 (MARP1) alters sarcomere structures in mammalian skeletal muscle via titin association Michel N. Kuehn (Muenster, Germany) |

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Friday, 20 September 2024, 14:55 - 16:25 | Lecture Hall C1

S 08 | What's new in? Knowing Neurophysiology state-of-the-science

Chairs: Wolfgang Greffrath (Mannheim, Germany); Timo Kirschstein (Rostock, Germany)

| 14:55 | S 08-01 | What is new in motion planning? Jochen Roeper (Frankfurt, Germany) |
|-------|---------|--|
| 15:17 | S 08-02 | What's new in taste? Timo Kirschstein (Rostock, Germany) |
| 15:39 | S 08-03 | What's new in fear extinction? Neural circuits of a dopaminergic prediction error signal underlying fear extinction learning Ximena I. Salinas-Hernandez (Frankfurt am Main, Germany) |
| 16:01 | S 08-04 | Do strong synapses live longer? All-optical interrogation of the structure-function relationship at indivudal excitatory synapses in vivo J. Simon Wiegert (Mannheim, Germany) |

of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS²) Physiology









Friday, 20 September 2024, 14:55 - 16:25 | Lecture Hall A

S 09 | Immune cell trafficking in the microcirculation: from the fetus to the adult

Chairs: Markus Sperandio (Munich); Katrin Kierdorf (Freiburg, Germany)

| 14:55 | S 09-01 | Atypical chemokine receptors in control of immune cell trafficking Antal Rot (London, UK) |
|-------|---------|--|
| 15:17 | S 09-02 | Pre- and perinatal dynamics of tissue-resident macrophages Katrin Kierdorf (Freiburg, Germany) |
| 15:39 | S 09-03 | Preimplantation factor (PIF) is a critical modulator of neutrophil functions during pregnancy Roland Immler (Munich, Germany) |
| 16:01 | S 09-04 | Intracellular signaling in mouse and human inflammatory disease models Attila Mócsai (Budapest, Hungary) |

of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS²) Physiology











Friday, 20 September 2024, 14:55 - 16:25 | Lecture Hall C2

WS 01 | Open Access Publishing in Physiology

of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS2) Physiology











Friday, 20 September 2024, 16:25 - 16:45 | Lecture Hall A, Lecture Hall B, Lecture Hall C1, Lecture Hall C2

Coffee Break



of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS²) Physiology







Friday, 20 September 2024, 16:45 - 17:30 | Lecture Hall C1

PL 03 | Plenary Lecture: J. Knoblich

Chairs: Jochen Roeper (Frankfurt/Main)

Presentations:

16:45 PL 03 Modeling neural network pathology in cerebral organoids

Jürgen Knoblich (Vienna, Austria)



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Friday, 20 September 2024, 17:30 - 19:30 | Aula, Foyer (Auditorium Centre)

Poster Session C



of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS²) Physiology









Friday, 20 September 2024, 17:30 - 19:30 | Aula, Foyer (Auditorium Centre)

Fredy Delgado Lagos (Frankfurt am Main, Germany)

C 01 | Cardiac Metabolism

Chairs: Tilmann Volk (Erlangen, Germany); Gerhild Euler (Gießen, Germany)

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| C 01-01 | Sex-Specific Cardiovascular Responses to Chronic High-Salt Diet Sevilay Sahoglu Goktas (Lund, Sweden) |
|---------|---|
| C 01-02 | Lipid droplet accumulation in isolated cardiomyocytes affects titin-based cardiomyocyte properties Katharina Voigt (Düsseldorf, Germany) |
| C 01-03 | Altered skeletal muscle function in a diabetic mouse model with diet-induced lipid accumulation Julian Große (Düsseldorf, Germany) |
| C 01-04 | Positive inotropic effects of glucose-dependent insulinotropic polypeptide in the human atrium Joachim Neumann (Halle (saale), Germany) |
| C 01-05 | PKC Induces T-System Loss mediated by PKD/NF κ B-Driven Macropinocytosis in Cardiac Myocytes Aiora Martinez-Vilchez (Erlangen, Germany) |
| C 01-06 | Endothelium-derived SMOC1 protects against loss of cardiac function after myocardial infarction |



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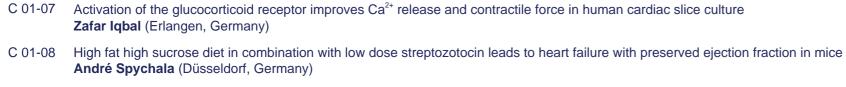












- Diabetes mellitus associated HFpEF development disturbs left ventricular geometry C 01-09 André Heinen (Düsseldorf, Germany)
- Diabetes mellitus associated HFpEF is accompanied by an increased myocardial fatty acid oxidation capacity C 01-10 André Heinen (Düsseldorf, Germany)

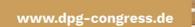


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Friday, 20 September 2024, 17:30 - 19:30 | Aula, Foyer (Auditorium Centre)

C 02 | Neuroscience (Systems)

Chairs: Josef Bischofberger (Basel, Switzerland); Rüdiger Köhling (Rostock, Germany)

- C 02-01 Directed and acyclic synaptic connectivityin the human layer 2-3 cortical microcircuit **Yangfan Peng** (Berlin, Germany)
- C 02-02 Under environmental stress, electrical synapse plasticity contributes to behavioural adaptation in *C. elegans* **Karl E. Busch** (Potsdam, Germany)
- C 02-03 Glomerulus-specific inhomogeneity of the resting activity in the olfactory bulb of mice. **Yury Kovalchuk** (Tübingen, Germany)
- C 02-04 *In vivo* awake Neuropixels recordings of putative dopamine neurons in the substantia nigra reveal distinct firing patterns related to movement **Yingning Lu** (Frankfurt, Germany)
- C 02-05 Interhemispheric synaptic inputs to neocortical pyramidal cells with dendritic versus somatic axon origin **Aline Pannier** (Heidelberg, Germany)
- C 02-06 The K_{ATP} channel opener Levcromakalim can influence neuronal excitation and Cortical Spreading Depolarization (CSD) in adult rats **Frank Richter** (Jena, Germany)

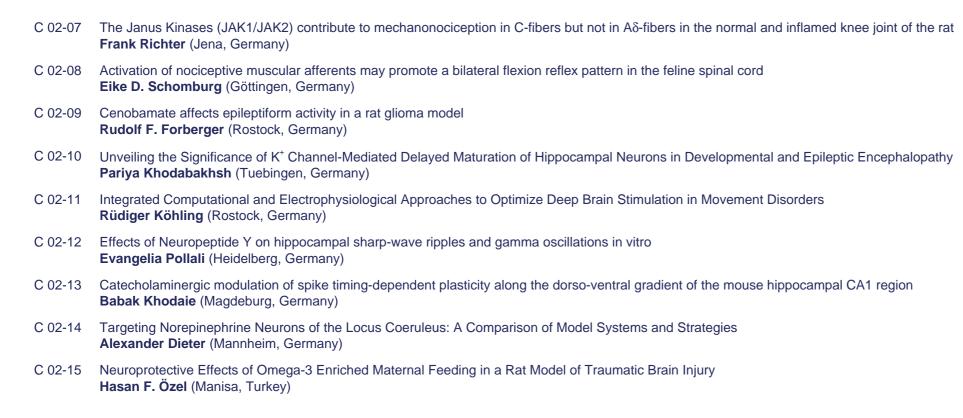
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C 02-17 Taste-associative learning to induce behaviorally conditioned analgesia in a rat model of inflammatory pain – A model for placebo analgesia?

Stephan Leisengang (Essen, Germany)



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Friday, 20 September 2024, 17:30 - 19:30 | Aula, Foyer (Auditorium Centre)

C 03 | Ion channels (cellular function)

Chairs: Friederike Stumpff (Potsdam, Germany); Olga Garaschuk (Tübingen, Germany)

Presentations:

| C 03-01 | Anti-inflammatory and analgesic effects of novel $\alpha 9\alpha 10$ nicotinic acetylcholine receptor agonists Katrin Richter (Giessen, Germany) |
|---------|--|
| C 03-02 | New insights into the gating mechanisms of Orai calcium channel paralogs Bartlomiej Augustynek (Bern, Switzerland) |
| C 03-03 | Store-operated Ca ²⁺ entry in the human placenta Sofia Jarrin (Bern, Switzerland) |
| C 03-04 | C-terminal truncation does not abolish ion channel function of human polycystin-2 heterologously expressed in <i>Xenopus laevis</i> oocytes |

C 03-05 Mass spectrometry?based protein—protein interaction of organic cation transporter 3 (OCT3)

Jae-Won Yang (Vienna, Austria)

Jae-won rang (vienna, Austria

Bardha Azemi (Erlangen, Germany)

C 03-06 The bile acid-sensitive ion channel (BASIC) affects the morphology of pancreatic islets via regulating the transcription factor paired box homeodomain 6.

Jingyu Yang (Aachen, Germany)

of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS2) Physiology











Deciphering the Role: Exploring the channel activity, localisation and interactome of hCoV-229E ap4 viroporin C 03-08 Jonathan Schlegel (Marburg, Germany)



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Friday, 20 September 2024, 17:30 - 19:30 | Aula, Foyer (Auditorium Centre)

C 04 | Oxygen and HIF

Chairs: Carsten Scholz (Greifswald, Germany); Karin Kirschner (Berlin, Germany)

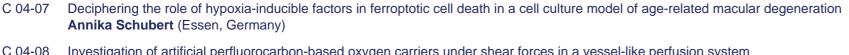
- Impact of the hypoxia-inducible factor in pancreatic ductal adenocarcinoma on T cell function and differentiation in the tumor microenvironment C 04-01 Yves Schild (Essen, Germany)
- C 04-02 Comparative analysis of the hypoxia impact on adenovirus serotypes for the identification of favorable oncolytic vector candidates Anna Malyshkina (Essen, Germany)
- Prolonged oxygen supply in cell culture by novel extended-release oxygen carrier C 04-03 Fabian Nocke (Essen, Germany)
- Impact of albumin-derived artificial oxygen carriers on monocytes C 04-04 Hanah Khachani (Essen, Germany)
- The Role of the Hypoxia-Inducible Factors in Urinary Bladder Carcinoma Project Outline C 04-05 Vivienne Schneider (Essen, Germany)
- C 04-06 Effect of hypoxic priming in apoptotic cell clearance by bone marrow-derived murine macrophages Brenda Krishnacoumar (Essen, Germany)











- Investigation of artificial perfluorocarbon-based oxygen carriers under shear forces in a vessel-like perfusion system C 04-08 Jan-Eric Sydow (Essen, Germany)
- The effect of isoleucine preconditioning on neuroprotection via HIF-1α signaling after oxygen-glucose deprivation insult C 04-10 Xujin Yao (Essen, Germany)
- Insoluble HIFa protein aggregates by cadmium disrupt hypoxia-PHD-HIFa-EPO signaling in renal EPO-producing epithelial (NRK-52E) and interstitial (FAIK3-5) cells C 04-11 Timm Schreiber (Witten, Germany)

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Amanda Ridder (Bochum, Germany)





Friday, 20 September 2024, 17:30 - 19:30 | Aula, Foyer (Auditorium Centre)

C 05 | Pulmonary system and respiration

Chairs: Ingrid Fleming (Frankfurt, Germany); Kai Schuh (Würzburg, Germany)

Presentations:

C 05-07

| C 05-02 | Serum calcification propensity is increased in systemic sclerosis and associates with lung diffusion capacity Azmat Sohail (Linz, Austria) |
|---------|--|
| C 05-03 | Exploring the impact of the A2B receptor in the pulmonary vasculature Jana Lewandowski (Bochum, Germany) |
| C 05-04 | High-magnitude cyclic stretch differentially regulates protein and RNA sialylation in the alveolar epithelial glycocalyx Jubilant K. Abledu (Berlin, Germany) |
| C 05-05 | Beta arrestin 1 in asthma bronchiale Annika Simon (Bochum, Germany) |
| C 05-06 | Fibroblast-specific actions of C-Type Natriuretic Peptide/cyclic GMP signaling in Pulmonary Fibrosis Rene Weyer (Würzburg, Germany) |

Pharmacological Gq -protein inhibition improves right heart function in hypoxia-induced pulmonary hypertension

of the German Physiological Society (103rd), Austrian Physiological Society and Life Sciences Switzerland (LS2) Physiology











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C 05-08 Heterozygous titin deletion causes altered right ventricular remodelling in a mouse model of pulmonary hypertension Kimberley S. Stein (Bochum, Germany)

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Friday, 20 September 2024, 17:30 - 19:30 | Aula, Foyer (Auditorium Centre)

C 06 | Endothelial cells: angiogenesis

Chairs: Markus Hecker (Heidelberg, Germany); Kristina Kusche-Vihrog (Lübeck, Germany)

- C 06-01 Identification and functional characterization of endothelial cell microproteins encoded by non-canonical open reading frames.

 Mauro Siragusa (Frankfurt am Main, Germany)
- C 06-02 Beyond silencing: The HUSH complex maintains endothelial angiogenic activity through novel interactions **Matthias S. Leisegang** (Frankfurt, Germany)
- C 06-04 The Heart's Capillary Network: A Highly Modular Structure with Anisotropic and Elongated Submodules Rene Markovi? (Maribor, Slovenia)
- C 06-05 Identification of endothelial long non-coding RNAs to promote regenerative angiogenesis in the damaged myocardium **Diba Rafii** (Frankfurt am Main, Germany)
- C 06-06 The Gap Junctional Communication (GJC) between endothelial progenitor cells (EPC) and endothelial cells (EC) promotes the formation of angiogenic networks **Christina Buchberger** (Augsburg, Germany)
- C 06-07 The inflammation-induced microprotein miP-PSTPIP2 modulates endothelial cell activation **Beyza Güven** (Frankfurt am Main, Germany)

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C 06-08 Quantifying the influence of cell-cell interactions on the dynamics of confluent endothelial cells Anselm Hohlstamm (Dresden, Germany)

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Friday, 20 September 2024, 17:30 - 19:30 | Aula, Foyer (Auditorium Centre)

C 07 | Renal: Tubular function and transport

Chairs: David Hoogewijs (Fribourg CH, Switzerland); Catherine Meyer-Schwesinger (Hamburg, Germany)

- Development of a Predictive Equation for Estimating 24-Hour Urine Phosphate Excretion from Spot Urine Collection C 07-01 Yongchao Li (Zurich, Switzerland)
- C 07-02 The murine TMEM16J variant T595A modulates intracellular calcium signaling and cytokine release in mouse tubular epithelial cells and T-lymphocytes. Rainer Schreiber (Regensburg, Germany)
- Influence of age and sex on renal phosphate homeostasis C 07-03 Laurine Lang (Zürich, Switzerland)
- Aging uncovers the critical role of WDR72 for kidney function in female mice C 07-04 Hannah Auwerx (Zurich, Switzerland)
- Contribution of the YER motif to the function of organic cation transporter 1, with focus on the substrate specificity of Y361 C 07-05 Sarah Römer (Greifswald, Germany)
- Effect of cellular polarization and asymmetric medium osmolality on gene expression profile in murine collecting duct cells C 07-06 Nicole Schary (Witten/Herdecke, Germany)









- Sex differences in renal acid handling in Wdr72-deficient mice C 07-07 **Soline Bourgeois** (Zurich, Switzerland) Separating basolateral from apical potassium currents in individual distal nephron cells C 07-08 Viatcheslav Nesterov (Erlangen, Germany) Genetic deletion of Claudin-3 does not alter intestinal paracellular phosphate absorption C 07-09 Zsuzsa Radványi (Zürich, Switzerland) ABCB1 along with AK1 mediates nucleotide-gated channel regulation of ROMK2 C 07-10 Aparna Renigunta (Marburg, Germany) Involvement of Xenotropic and Polytropic retroviral receptor 1 in phosphate transport C 07-11 **Ashley L. Fernandes** (Zurich, Switzerland) C 07-12
- Targeting subunit of the myosin-light-chain-phosphatase, MYPT1 at threonine 696 prevents development of hypercontractile phenotype of aged mouse interlobar arteries Viktor V. Velyanov (Varna, Bulgaria)

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Networking-Event with Best Oral Abstract Award Ceremony



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Saturday, 21 September 2024, 8:30 - 10:00 | Lecture Hall A

OS 07 | Renal: Calcium-/Phosphat Homeostasis

Chairs: Soline Bourgeois (Zürich, Switzerland); Michael Fähling (Berlin, Germany)

| 8:30 | OS 07-01 | The effect of intestinal depletion of Claudin-4 on paracellular phosphate absorption Zsuzsa Radványi (Zürich, Switzerland) |
|------|----------|--|
| 8:45 | OS 07-02 | The sodium phosphate cotransporter NaPi-IIb is expressed and upregulated in kidneys of patients with chronic kidneys disease. Rupert W. Busch (Zürich, Switzerland) |
| 9:00 | OS 07-03 | Association of mineral stress with mortality in the geriatric population Jakob VoelkI (Linz, Austria) |
| 9:15 | OS 07-04 | Assessing the clinical relevance of <i>SCL34A1</i> and <i>SCL34A3</i> variants in kidney stone disease through biochemical parameters and in vitro functional studies Mohamed Halwish (Zurich, Switzerland) |
| 9:30 | OS 07-05 | Assessing human renal phosphate transporters and their dependency on age and sex Laurine Lang (Zurich, Switzerland) |
| 9:45 | OS 07-06 | DUSP1 mediates anti-calcific effects of fisetin in vascular smooth muscle cells Mehdi Razazian (Linz, Austria) |

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Saturday, 21 September 2024, 8:30 - 10:00 | Lecture Hall B

OS 08 | Vascular physiology and signalling

Chairs: Matthias Leisegang (Frankfurt, Germany); Anke Zieseniss (Göttingen, Germany)

| 8:30 | OS 08-01 | Nuclear eNOS interacts with and S-nitrosates ADAR1 to modulate type I interferon signalling and endothelial function. Xiaozhu Zhou (Frankfurt am Main, Germany) |
|------|----------|--|
| 8:45 | OS 08-02 | Endothelial cytochrome P450 reductase-derived cholesterol limits angiogenesis Pedro Felipe Malacarne (Frankfurt am Main, Germany) |
| 9:00 | OS 08-03 | Pericyte-actions of Atrial Natriuretic Peptide foster reparative postischemic angiogenesis Zihou Liu (Würzburg, Germany) |
| 9:15 | OS 08-04 | Role of lipoma-preferred partner in the phenotype control of vascular smooth muscle cells Jaafar Al-Hasani (Heidelberg, Germany) |
| 9:30 | OS 08-05 | Pharmacological Gq protein inhibition prevents and reverses pulmonary hypertension Alexander Seidinger (Bochum, Germany) |
| 9:45 | OS 08-06 | Targeting S1P-associated immune activation to lower blood pressure in Angiotensin II-associated hypertension. Anja Meissner (Lund, Sweden) |

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Saturday, 21 September 2024, 9:15 - 10:00 | Lecture Hall C1

TL | Teaching Lecture "Circadian rhythms and sleep"

Chairs: **Armin Just** (Freiburg, Germany)

Presentations:

TL 01 Circadian rhythms and sleep

Henrik Oster (Lübeck, Germany)

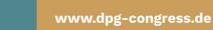


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Saturday, 21 September 2024, 10:00 - 10:30 | Lecture Hall A,Lecture Hall B,Lecture Hall C1,Lecture Hall C2

| Coffee Break



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Saturday, 21 September 2024, 10:30 - 11:15 | Lecture Hall C1

PL 04 | Plenary Lecture: V. Egger

Chairs: Ralf Brandes (Frankfurt/Main, Austria)

Presentations:

From the role of reciprocal synapses in the olfactory bulb to the discovery of fast heartbeat interoception: How to 'feel the pulse' within the brain 10:30

Veronica Egger (Regensburg, Germany)



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Saturday, 21 September 2024, 11:15 - 11:25 | Lecture Hall C1

Poster Prize Ceremony



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Saturday, 21 September 2024, 11:35 - 13:05 | Lecture Hall C2

OS 09 | Blood & Oxygen

Chairs: Katharina Broeker (Regensburg, Germany); Darko Maric (Fribourg CH, Switzerland)

| 11:35 | OS 09-01 | Roxadustat affects inflammatory response in human leukocytes Anna Wrobeln (Essen, Germany) | |
|-------|----------|--|--|
| 11:53 | OS 09-02 | Secreted modular calcium binding protein 1 is required for TGF-b-mediated resolution of inflammation Fredy Delgado Lagos (Frankfurt am Main, Germany) | |
| 12:11 | OS 09-03 | The organic cation transporter 3 (OCT3) mediates the transport of histamine in basophilic granulocytes Moritz Pernecker (Münster, Germany) | |
| 12:29 | OS 09-05 | Targeted inhibition of hypoxia-inducible factors in a model of age-related macular degeneration protects from cell death and metabolic dysregulation Yoshiyuki Henning (Essen, Germany) | |
| 12:47 | OS 09-06 | Androglobin, a chimeric mammalian globin, is associated with ciliogenesis and sonic hedgehog signaling Anna Keppner (Fribourg, Switzerland) | |
| | | | |

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Saturday, 21 September 2024, 11:35 - 13:05 | Lecture Hall C1

S 10 | Calcium channelopathies: from molecular mechanisms to clinical diversity

Chairs: Nadine Ortner (Innsbruck, Austria); Gabriel Stölting (Berlin, Germany)

| 11:35 | S 10-01 | CACNA1D variants in endocrine and neurological disease Gabriel Stölting (Berlin, Germany) |
|-------|---------|---|
| 12:05 | S 10-02 | Neurodevelopmental disorders related to CACNA1C variants; beyond Timothy Syndrome Jack F.G. Underwood (Cardiff, UK) |
| 12:35 | S 10-03 | Disease variants in the activation gate of T-type calcium channel CACNA1I linked to neurodevelopmental disorders and epilepsy Yousra El Ghaleb (Innsbruck, Austria) |

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Saturday, 21 September 2024, 11:35 - 13:05 | Lecture Hall A

S 11 | Neuropeptide modulation of fear- and anxiety-related networks

Chairs: Evangelia Pollali (Heidelberg, Germany); Anne Albrecht (Magdeburg, Germany)

| 11:35 | S 11-01 | NPY-mediated changes in the BLA that reduce anxiety William F. Colmers (Edmonton, Alberta, Canada) |
|-------|---------|--|
| 11:57 | S 11-02 | "Modulation of fear-relevant circuits by Neuropeptide S in mice" Kay Jüngling (Münster, Germany) |
| 12:19 | S 11-03 | Role of neuropeptide-expressing neurons in the integration of fear/anxiety and hunger Ramon Tasan (Innsbruck, Austria) |
| 12:41 | S 11-04 | Fear memory under circadian strain: hippocampal circuit modulation by orexin Anne Albrecht (Magdeburg, Germany) |



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Saturday, 21 September 2024, 11:35 - 13:05 | Lecture Hall B

S 12 | The physiology of SLC26 transporters and their clinical significance

Chairs: Dominik Oliver (Marburg, Germany); **Helga Vitzthum** (Hamburg, Germany)

| 11:35 | S 12-01 | Pathophysiological role of SLC26A4 (pendrin) in the inner ear Silvia Dossena (Salzburg, Austria) |
|-------|---------|---|
| 11:57 | S 12-02 | Intestinal acid/base and electrolyte transport by SLC26A9, A6 and A3 in health and disease Ursula E. Seidler (Hannover, Germany) |
| 12:19 | S 12-03 | Secretin is a homeostatic bicarbonate hormone Peder Berg (Aarhus, Denmark) |
| 12:41 | S 12-04 | Pendrin: An renal anion exchanger linking acid-base to blood pressure regulation Dominique Eladari (Amiens, France) |

