

19.–21.09.2024 — Vienna, Austria

Annual Meeting

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



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Wednesday, 18 September 2024, 14:00 - 18:00 | MedUni Campus (outside of the congress venue)

PS | PRE-SYMPOSIA

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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)

Presentations:

- 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)

Presentations:

- 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

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

Presentations:

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

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

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

Presentations:

- 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)

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

| Coffee Break

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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, Switzerland), 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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DEUTSCHE
PHYSIOLOGISCHE
GESELLSCHAFT



Life Sciences Switzerland
Physiology



austrian physiological society

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Thursday, 19 September 2024, 12:30 - 14:00 | Lecture Hall A, Lecture Hall B, Lecture Hall C1, Lecture Hall C2

| Break (Lunch on own)

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Thursday, 19 September 2024, 14:00 - 14:45 | Lecture Hall C1

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)

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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)

Presentations:

- 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 PIP₂ 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)

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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)

Presentations:

- 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)

Presentations:

- 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?
Ioana Alesutan (Linz, Austria)

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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)

Presentations:

- 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

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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)

Presentations:

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

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A 02 | Ion channels (voltage-gated)

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

Presentations:

- A 02-01 Electrochemical coupling at the plasma membrane by mammalian voltage sensitive phosphatase
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)
- A 02-03 Modification of human Kv4 channels by KCHIP1 splice variants
Wuyou Cao (Hamburg, Germany)
- A 02-04 Gating-modifying *CACNA1D* (Cav1.3) missense variants lead to diverse clinical phenotypes
Horia C. Hermenean (Innsbruck, Austria)
- A 02-05 The biphasic effect of hydrogen peroxide on the voltage gated K⁺-channel Kv1.5 expressed in *Xenopus* oocytes
Ornella Yamdjeu (Giessen, Germany)
- A 02-06 Functional characterization of *KCND2* missense variants affecting the Kv4.2 pore domain
Fabian Pascal Schönwald (Hamburg, Germany)

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- A 02-07 Influence of Kv8 subunits on Kv7 channels: Molecular determinants and functional implications
Rajeshwari Bisen (Marburg, Germany)
- A 02-08 Functional characterization of *KCND1* variants identifies new disease gene
Tassja Kalm (Hamburg, Germany)
- A 02-09 Light-induced action potentials and stem cell-derived sensory neurons: an automated patch clamp investigation
Kefan Yang (München, Germany)
- A 02-10 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
Judith Lechner (Innsbruck, Austria)

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

A 03 | Neuroscience (cellular)

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

Presentations:

- A 03-01 Phospho-mimetic mutant of the AMPAR-associated protein Porcupine reduces Wnt5a secretion and neuronal outgrowth
Naomi Mölders (Düsseldorf, Germany)
- A 03-02 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)
- A 03-04 Relaxin' cortical circuits: understanding the effect of relaxin in the mouse cortex
Sadat Hodzic (München, Germany)
- A 03-05 SOM kind of neuromodulator: Cell-type specific effects of somatostatin in the cortex
Therese Riedemann (Salzburg, Austria)
- A 03-06 Intrinsic rebound burst excitability is unique among dopamine midbrain neurons for those projecting to the dorso-lateral striatum
Strahinja Stojanovic (Frankfurt, Germany)

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- A 03-07 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 *in vitro* model for the investigation of sex-specific differences in migraine pathophysiology
Beatrice A. Nossek (Bielefeld, Germany)
- A 03-10 Action potential-evoked Ca²⁺ 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
Michael D. Hadler (Berlin, Germany)
- A 03-13 A novel auxiliary subunit fine-tunes TARPed AMPA receptors
Tobias Strasdeit (Duesseldorf, Germany)
- A 03-14 Characterization of a Novel Enhancer of AMPA Receptor Fidelity
Nikolaj Klöcker (Düsseldorf, Germany)

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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)

Presentations:

- 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 Kovačič (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)
- A 04-08 Comparison of Glucose-Stimulated Calcium Responses in Non-Diabetic and Diabetic Human Pancreatic Islets
Viljem Pohorec (Maribor, Slovenia)
- A 04-09 Impact of Dietary Protein Variation on Human Metabolome: Insights from NMR-based Analysis
Sandra Haupt (Kulmbach, Germany)
- A 04-10 Reversal of diet-induced beta cell dysfunction of type 2 diabetes with caloric restriction
Jan Kopecky (Maribor, Slovenia)
- A 04-11 Investigating the impact of GLP-1 receptor agonists on beta cell calcium dynamics
Eva Paradiž Leitgeb (Maribor, Slovenia)
- A 04-12 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
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)

Presentations:

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

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- A 05-07 Gain-of-function mutation of PDE3A prevents renal signs of chronic kidney disease
Fiona R. Spindler (Berlin, Germany)
- A 05-08 Enalapril protects mice with renin cell-specific Gs α knockout from renal endothelial injury
Annika Wegner (Dresden, Germany)
- A 05-09 P2Y6-signaling in renal fibrosis
Anna-Lena Forst (Regensburg, Germany)
- A 05-10 Cytoskeletal GTPase septin expression and recruitment to damaged mitochondria by cadmium in the kidney
Nadiya Romanova (Bielefeld, Germany)
- A 05-11 Podocyte-derived vesicles as urinary markers of kidney function
Luisa Schnobrich (Regensburg, Germany)
- A 05-12 Can podocytic extracellular vesicles affect the metabolism of tubular epithelial cells?
Anna Lieven (Essen, Germany)
- A 05-13 Revealing Molecular Insights into New Claudin-10b Mutations in HELIX Syndrome Patients
Markus Bleich (Kiel, Germany)
- A 05-14 The urine acid/base score and renal disease progression: evidence from pre-clinical animal models
Jesper F. Andersen (Aarhus C, Denmark)
- A 05-15 Discrimination of chronic vs. end-stage kidney disease requiring hemodialysis based on untargeted serum proteomics
Oliver Drews (Linz, Austria)

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A 06 | Endothelial cell activation

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

Presentations:

- A 06-01 The endothelial important lncRNA *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 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*
Barbora Belakova (Vienna, Austria)

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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

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

OS 04 | Neuroscience

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

Presentations:

- 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 *in vivo* 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 Brüggemann (Göttingen, Germany)

Presentations:

- 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

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

Presentations:

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

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

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

Presentations:

- 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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| Poster Session B

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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)

Presentations:

- 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)

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- 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)

Presentations:

- 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)
- B 02-03 Analysis of the transport mechanism of SLC26A6
Annalisa Questino (Marburg, Germany)
- B 02-04 Zinc blocks the HCNL1 proton channel
Makoto F. Kuwabara (Marburg, Germany)
- B 02-05 p53 regulates TMEM206 in a p21-dependent manner and controls acid-induced cell death in HCT116 colorectal cancer cells
Korollus Melek (Bern, Switzerland)
- B 02-06 The relationship between extracellular and intracellular pH in glioblastoma cancer stem cells – influence of acid transporters
Jan Münzner (Aachen, Germany)

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- B 02-07 Targeting the Ca²⁺-activated K⁺ channel K_{Ca}3.1 in pancreatic ductal adenocarcinoma
Benjamin Soret (Münster, Germany)
- B 02-08 Do TMEM175 channels conduct protons and K⁺ ions at the same time?
Sönke Cordeiro (Kiel, Germany)
- B 02-09 Experiments in the student laboratory course: effects of snacking on blood glucose levels
David Manneck (Potsdam, Germany)

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B 03 | Ion channels (sensory and other systems)

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

Presentations:

- 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)

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- B 03-07 Unraveling the selectivity of ionic pathways of TRPM3 channel isoforms
Júlia Castro-Marsal (Marburg, Germany)
- 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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B 04 | Blood and hypoxia

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

Presentations:

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

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- B 04-07 Long-term storage of lecithin-modified nanoscale oxygen carriers after lyophilization
Marina Penzel (Essen, Germany)
- B 04-08 Automated blood cell recognition and morphological quantifications: AI-based algorithm with an explainable output
Manuel A. Campos Medina (Vienna, Austria)
- B 04-09 Nuclear actin shaping the transcriptional response to hypoxia parallel to the HIF pathway
Anke Zieseniss (Göttingen, Germany)

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B 05 | Vascular pathophysiology

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

Presentations:

- 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 $[Ca^{2+}]$ 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
Nikola R. Lazarov (Varna, Bulgaria)
- B 05-06 Impact of Secreted modular calcium binding protein (SMOC) 1 on foam cell formation and atherosclerosis development
Ürün Ukan (Frankfurt am Main, Germany)

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- B 05-07 Effect of calcineurin (PPP3CB) on basal and AngII-induced renal alterations
Alexander Nolze (Halle (Saale), Germany)
- B 05-08 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)
- B 05-09 From physiological research to rational effective therapy of small vessel disease and tissue hypoxia.
Elfriede Leniger-Follert (Hagen, Germany)
- B 05-10 The endocannabinoid anandamide mediates anti-inflammatory effects through activation of NR4A nuclear receptors
Tom Teichmann (Frankfurt, Germany)

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B 06 | Control of gene expression & signalling

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

Presentations:

- 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. Angenooth (Vienna, Austria)

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- B 06-07 Pericellular potassium gradients reported by a genetically encoded extracellular indicator
Lucas van den Boom (Bonn, Germany)
- B 06-08 Effect of tirzepatide, a GIPR and GLP1R dual agonist, on endothelial cell function and metabolism
Andrijana Kirsch (Graz, Austria)
- B 06-09 RADIAnT: Unified identification of statistically-robust RNA-DNA interactions from diverse data types
Simonida Zehr (Frankfurt, Germany)

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

B 07 | Tumorphysiology

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

Presentations:

- B 07-01 The acidic tumor microenvironment hampers tumor cell proliferation via Ca²⁺ 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.
Robert Labes (Berlin, Germany)
- B 07-06 Characterization of the novel Heat Shock Protein 90 Inhibitor 246TMP-3SF5 as potential new treatment option for hepatocellular carcinoma
Alessandra Viperino (Berlin, Germany)

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- 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 HCO_3^-
Christian Stock (Hannover, Germany)
- B 07-10 $\text{K}_{\text{Ca}}3.1$ 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)

Presentations:

- 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_v4 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)

Presentations:

- 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 individual excitatory synapses in vivo
J. Simon Wiegert (Mannheim, Germany)

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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)

Presentations:

- 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)

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

WS 01 | Open Access Publishing in Physiology

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

| Coffee Break

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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

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

C 01 | Cardiac Metabolism

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

Presentations:

- 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/NFκB-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
Fredy Delgado Lagos (Frankfurt am Main, Germany)

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- C 01-07 Activation of the glucocorticoid receptor improves Ca²⁺ release and contractile force in human cardiac slice culture
Zafar Iqbal (Erlangen, Germany)
- C 01-08 High fat high sucrose diet in combination with low dose streptozotocin leads to heart failure with preserved ejection fraction in mice
André Sychala (Düsseldorf, Germany)
- C 01-09 Diabetes mellitus associated HFpEF development disturbs left ventricular geometry
André Heinen (Düsseldorf, Germany)
- C 01-10 Diabetes mellitus associated HFpEF is accompanied by an increased myocardial fatty acid oxidation capacity
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)

Presentations:

- C 02-01 Directed and acyclic synaptic connectivity in 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 Levromakalim can influence neuronal excitation and Cortical Spreading Depolarization (CSD) in adult rats
Frank Richter (Jena, Germany)

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- C 02-07 The Janus Kinases (JAK1/JAK2) contribute to mechanonociception in C-fibers but not in A δ -fibers in the normal and inflamed knee joint of the rat
Frank Richter (Jena, Germany)
- C 02-08 Activation of nociceptive muscular afferents may promote a bilateral flexion reflex pattern in the feline spinal cord
Eike D. Schomburg (Göttingen, Germany)
- C 02-09 Cenobamate affects epileptiform activity in a rat glioma model
Rudolf F. Forberger (Rostock, Germany)
- C 02-10 Unveiling the Significance of K⁺ Channel-Mediated Delayed Maturation of Hippocampal Neurons in Developmental and Epileptic Encephalopathy
Pariya Khodabakhsh (Tuebingen, Germany)
- C 02-11 Integrated Computational and Electrophysiological Approaches to Optimize Deep Brain Stimulation in Movement Disorders
Rüdiger Köhling (Rostock, Germany)
- C 02-12 Effects of Neuropeptide Y on hippocampal sharp-wave ripples and gamma oscillations in vitro
Evangelia Pollali (Heidelberg, Germany)
- C 02-13 Catecholaminergic modulation of spike timing-dependent plasticity along the dorso-ventral gradient of the mouse hippocampal CA1 region
Babak Khodaie (Magdeburg, Germany)
- C 02-14 Targeting Norepinephrine Neurons of the Locus Coeruleus: A Comparison of Model Systems and Strategies
Alexander Dieter (Mannheim, Germany)
- C 02-15 Neuroprotective Effects of Omega-3 Enriched Maternal Feeding in a Rat Model of Traumatic Brain Injury
Hasan F. Özel (Manisa, Turkey)

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- C 02-16 Effects of Ketamine/Xylazine Combination and Thiopental anesthesia on various electrophysiological recordings.
Hasan Kazda?I? (izmir, Turkey)
- 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
Bartłomiej 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 *Xenopus laevis* oocytes
Bardha Azemi (Erlangen, Germany)
- C 03-05 Mass spectrometry?based protein–protein interaction of organic cation transporter 3 (OCT3)
Jae-Won Yang (Vienna, Austria)
- 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)

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- C 03-07 A small molecule PAH antidote binds in the pore cavity of TASK-1 K_{2p} channels and prevents the X-gate from closing
Marcus Schewe (Kiel, Germany)
- C 03-08 Deciphering the Role: Exploring the channel activity, localisation and interactome of hCoV-229E ap4 viroporin
Jonathan Schlegel (Marburg, Germany)

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C 04 | Oxygen and HIF

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

Presentations:

- C 04-01 Impact of the hypoxia-inducible factor in pancreatic ductal adenocarcinoma on T cell function and differentiation in the tumor microenvironment
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)
- C 04-03 Prolonged oxygen supply in cell culture by novel extended-release oxygen carrier
Fabian Nocke (Essen, Germany)
- C 04-04 Impact of albumin-derived artificial oxygen carriers on monocytes
Hanah Khachani (Essen, Germany)
- C 04-05 The Role of the Hypoxia-Inducible Factors in Urinary Bladder Carcinoma – Project Outline
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)

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- C 04-07 Deciphering the role of hypoxia-inducible factors in ferroptotic cell death in a cell culture model of age-related macular degeneration
Annika Schubert (Essen, Germany)
- C 04-08 Investigation of artificial perfluorocarbon-based oxygen carriers under shear forces in a vessel-like perfusion system
Jan-Eric Sydow (Essen, Germany)
- C 04-10 The effect of isoleucine preconditioning on neuroprotection via HIF-1 α signaling after oxygen-glucose deprivation insult
Xujin Yao (Essen, Germany)
- C 04-11 Insoluble HIF α protein aggregates by cadmium disrupt hypoxia-PHD-HIF α -EPO signaling in renal EPO-producing epithelial (NRK-52E) and interstitial (FAIK3-5) cells
Timm Schreiber (Witten, Germany)

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C 05 | Pulmonary system and respiration

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

Presentations:

- 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)
- C 05-07 Pharmacological Gq -protein inhibition improves right heart function in hypoxia-induced pulmonary hypertension
Amanda Ridder (Bochum, Germany)

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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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C 06 | Endothelial cells: angiogenesis

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

Presentations:

- 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)

Presentations:

C 07-01 Development of a Predictive Equation for Estimating 24-Hour Urine Phosphate Excretion from Spot Urine Collection
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)

C 07-03 Influence of age and sex on renal phosphate homeostasis
Laurine Lang (Zürich, Switzerland)

C 07-04 Aging uncovers the critical role of WDR72 for kidney function in female mice
Hannah Auwerx (Zurich, Switzerland)

C 07-05 Contribution of the YER motif to the function of organic cation transporter 1, with focus on the substrate specificity of Y361
Sarah Römer (Greifswald, Germany)

C 07-06 Effect of cellular polarization and asymmetric medium osmolality on gene expression profile in murine collecting duct cells
Nicole Schary (Witten/Herdecke, Germany)

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- C 07-07 Sex differences in renal acid handling in *Wdr72*-deficient mice
Soline Bourgeois (Zurich, Switzerland)
- C 07-08 Separating basolateral from apical potassium currents in individual distal nephron cells
Viatcheslav Nesterov (Erlangen, Germany)
- C 07-09 Genetic deletion of Claudin-3 does not alter intestinal paracellular phosphate absorption
Zsuzsa Radványi (Zürich, Switzerland)
- C 07-10 ABCB1 along with AK1 mediates nucleotide-gated channel regulation of ROMK2
Aparna Renigunta (Marburg, Germany)
- C 07-11 Involvement of Xenotropic and Polytopic retroviral receptor 1 in phosphate transport
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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Friday, 20 September 2024, 20:00 - 23:00 | Rathauskeller

| 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)

Presentations:

- 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 Voelkl (Linz, Austria)
- 9:15 OS 07-04 Assessing the clinical relevance of *SCL34A1* and *SCL34A3* 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)

Presentations:

- 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:

9:15 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:

10:30 PL 04 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
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)

Presentations:

- 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- β -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)

Presentations:

- 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)

Presentations:

- 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)

Presentations:

- 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)