EPHAR 2027 – Symposium Proposals

European Congress of Pharmacology, Frankfurt, 2027

Table of Contents of fully elaborated symposia

- **Formal Symposium Descriptions still pending**

Organizer (Name, Institution)	**Country**	**Topic**	**Comments**
Prof. Julian Mustroph (University of Regensburg)	Germany	Cardiac Amyloidosis and Cardiomyopathies	Industry Funding acquired
Dr. Bastian Schirmer (Signal Transduction Society Hannover)	Germany	Emerging strategies in targeting signal transduction pathways"	
Prof. Dietmar Trenk (Deutsche Gesellschaft für experimentelle und klinische Pharmakologie und Toxikologie e.V. Düsseldorf)	Germany	Paul-Martini-Symposium: Precise topic to be announced	The Paul-Martini Society sponsors this symposium with€ 10.000

Pharmacology in Times of Crisis: Preparedness and Resilience in Disaster and War Medicine

Chairs

Prof. Dr. Dr. Bernd Nürnberg — *Dept. of Pharmacology, Experimental Therapy & Toxicology, University Hospitals & Clinics, Tuebingen University, Germany*

Prof. Oksana Shevchuk, MD, PhD — *Dept. of Pharmacology & Clinical Pharmacology, National Medical University, Ternopil, Ukraine*

Symposium Description

Europe has entered a new era of geopolitical turbulences. Hybrid threats, terrorism, pandemics and open military conflicts increasingly affect everyday life, including universities, academic medicine, and healthcare systems. At the same time, European countries differ considerably in their preparedness for large-scale crises, disasters and wartime scenarios.

This symposium will address the growing importance of pharmacology and toxicology for resilient healthcare systems under crisis conditions. Particular emphasis will be placed on the implications for patient care, biomedical research, and medical education. Modern challenges have expanded pharmacology and toxicology from primarily laboratory and clinical disciplines into key components of national and international security preparedness.

Pharmacological expertise is increasingly recognized as a critical pillar of resilient healthcare systems. This includes continuity of medicine supply chains, emergency stockpiling, antidote preparedness, access to essential medicines during crises, and rapid adaptation of treatment protocols under resource-limited conditions.

Experts from several European countries will provide firsthand insights into the impact of war and crisis situations on academic medicine. Special attention will be given to the challenges faced by early-career scientists and clinicians. Topics will also include the effect of destruction of healthcare infrastructure, organizational adaptation, shifting therapeutic priorities, innovative concepts for teaching and international cooperation, and the treatment of severely injured patients under extreme conditions.

Additional presentations will focus on mass-casualty management, pharmacological emergency strategies, resilient medical supply systems, and military–civilian medical logistics. Further contributions will address toxicological expertise derived from Novichok poisoning cases. Experiences from the recent Winter Olympic Games in Northern Italy and the EU-funded NIGHTINGALE project will illustrate modern interdisciplinary approaches to large-scale emergency coordination and disaster response.

Overall, the symposium emphasizes the critical role of pharmacological and toxicological expertise in developing synergistic and sustainable strategies for resilient healthcare preparedness from a European perspective.

Proposed Speakers

The list includes speakers who have already confirmed their participation in the symposium. Additional international speakers are currently being approached.

Speaker	Affiliation	Topic
Colonel Prof. Gerhard Achatz	*Dept. of Trauma & Orthopedic Surgery, Reconstructive & Septic Surgery, Sports Traumatology Bundeswehr Hospital Ulm, and University Hospitals & Clinics, Ulm, Germany*	Civil–Military Cooperation for Patient Care in Times of Geopolitical Crisis
Prof. Peter Bradl	*German Society for Disaster Medicine, and Institute for Rescue Services, Emergency & Disaster Management, University of Applied Sciences Würzburg-Schweinfurt, Germany*	Supporting Efficient Drug Allocation and Distribution in Cross-Sector Resilient Healthcare Systems
Roberto Faccincani, MD, MSc in Disaster Medicine	*S.S.D. Maxi Emergenze, Agenzia Regionale Emergenza Urgenza, Milano, Italy*	Preparing Healthcare Systems for the Next Crisis: Lessons from the Winter Olympics and Beyond
General Prof. Kai Kehe	*Medical Academy of the German Armed Forces, and Military Medical Science & Capability Development of the Medical Service, and Dept of Pharmacology & Toxicology, Medical Faculty, Munich University, Germany*	From Toxic Threats to Medical Resilience: New Tasks for Pharmacology and Toxicology
Dr. Paolo Malerba, MD *(Early-career scientist, working with Dr. Faccincani)*	*University of Eastern Piemonto Center for Research & Training in Disaster Medicine, Humanitarian & Global Helath, Novara, Italy*	Continuity of Pharmacological Care during armed Conflict: Experiences from the RHD-CORE Project

Prof. Bernd Nürnberg	*Dept. of Pharmacology, Experimental Therapy & Toxicology, University Hospitals & Clinics, Tuebingen University, Germany*	Introduction into the Era of Pharmacology in Times of Crisis
Speaker	**Affiliation**	**Topic**
Dr. Svitlana Palii *(Early-career scientist, Shevchuk lab)*	*Dept. of Pharmacology & Clinical Pharmacology, I. Horbachevsky Ternopil National Medical University, Ukraine*	Building a Scientific Career Under Wartime Conditions: Challenges for Pharmacological Research and Academic Medicine
Prof. Oksana Shevchuk	*Dept. of Project Management for Scientific Research, and Dept. of Pharmacology & Clinical Pharmacology, I. Horbachevsky Ternopil National Medical University, Ukraine*	Medicine Without Pause: Research, Education, and Patient Care in Wartime Ukraine
Colonel Prof. Dirk Steinritz *(or early-career scientist, Steinritz lab)*	*Institute of Pharmacology & Toxicology, German Armed Forces, and Dept of Pharmacology & Toxicology, Medical Faculty, Munich University, Germany*	Lessons from Novichok Poisoning for Toxicological Preparedness and Medical Response

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   https://commission.europa.eu/topics/preparedness_en
2. Deutsche Forschungsgemeinschaft. 2026. DFG will besseren Schutz von Forschungsdateninfrastruktur.
   Pressemitteilung Nr. 9 / 31. März 2026
3. Bundesministerium für Forschung, Technologie und Raumfahrt. 2025. Sektorübergreifende Maßnahmen resilienter Versorgung
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   Ann Glob Health. doi: 10.5334/aogh.4076
5. Korda M, Shulhai A, Shevchuk O, et al. 2025. Psychological well-being and academic performance of Ukrainian medical students under the burden of war: a cross-sectional study.
   Front Public Health. doi: 10.3389/fpubh.2024.1457026
6. Barth H, Worek F, Steinritz D, et al. 2024. Trauma-toxicology: Concepts, causes,

complications.
Naunyn Schmiedebergs Arch Pharmacol 397:2935-2948

7. Steindl D, Boehmerle W, Körner R, et al. 2021. Novichok nerve agent poissoning.
Lancet. doi: 10.1016/S0140-6736(20)32644-1

8. Zdarova Karasova J, Hrabinova M, Dlabkova A, et al. 2026. Next-generation broad-spectrum reactivators for effective countermeasure against organophosphorus poisoning.
Arch Toxicol. doi: 10.1007/s00204-026-04341-y

9. Franke A, Sahm J, Bieler D, Achatz G. 2024. Care for seriously injured people in military conflichts.
Zentralbl Chir. doi: 10.1055/a-2348-1043
10. Franke A, Bieler D, Achatz G. 2024. Crisis treatment in emergency and disaster medicine from the perspective “trauma surgery”: Terminology, scenarios, existing concepts and challenges
Unfallchirurgie (Hd). doi: 10.1007/s00113-024-01493-3
11. Leidi F, Boari GEM, Scarano O, et al. 2022. Comparison of the characteristics , morbidity, and mortality of COVID-19 between 1st and 2nd/3rd wave in a hospital setting in Lombardy.
Intern Emerg Med. doi: 10.1007/s11739-022-03034-5
12. NIGHTINGALE Consortium, et al. 2025. Bridging Gaps in Emergency Care: the NIGHTINGALE Project and the Future of AI in Mass Casualty Management.
J Med Internet Res. doi: 10.2196/67318

The Rise and Fall of Pharmacology in Germany and Austria: From Schmiedeberg to the Expulsion of Jewish Scientists

Chairs

Prof. Dr. Helmut Greim *Technical University of Munich, Munich, Germany*

Dr. Lizzie Burns *Department of Pharmacology, University of Oxford, UK*

Symposium Description

The discovery of a collection of photographs taken during a 1937 British Pharmacology Society (BPS) meeting, labelled “Joint meeting with the German Pharmacological Society”, initiated a collaboration between members of the DGPT and the BPS to piece together their identities. Preserved in the Department of Pharmacology at the University of Oxford, the photographs reveal friendly relations between British and German pharmacologists in the 1930s, including members of the National Socialist party alongside Jewish and political exiles.

This history symposium starts by focusing on the relationships between German, British and exiled Jewish and political pharmacologists under the rise of National Socialism as revealed through photographs from the 1930s. The session will then explore the experimental roots of modern pharmacology initiated by Rudolf Buchheim (1820-1879). His student Oswald Schmiedeberg (1838-1921) established an international school of pharmacology that helped create global networks of pharmacologists and led to pharmacological societies across the world. These connections contributed to the close relations between British and German pharmacologists before the Second World War. The symposium will finish with acknowledging the persecution of Jewish pharmacologists with examples from Austria, including Otto Loewi.

Proposed Speakers

Speaker	Affiliation	Topic
Dr. Lizzie Burns	*Dept. of Pharmacology, University of Oxford, UK*	**Behind the photographs**: *Shared Pre-war Histories of the British and German Pharmacological Societies*
Prof. Dr. Helmut Greim	*Technical University of Munich, Munich, Germany*	**The Schmiedeberg Connection**: A *Network of International Pharmacologists*
Prof. Dr. Michael Freissmuth	*Centre for Physiology and Pharmacology, Medical University of Vienna, Austria*	**Persecution and Exile**: *Austrian Pharmacologists under National Socialism*

Selected Key References

1. Greim H. Oswald Schmiedeberg (1838-1921) : Ninth Pharmacologic-Historical Forum, 2024, Munich, Germany. *Naunyn Schmiedebergs Arch Pharmacol.* 2024 Dec;397(12):9591-9596. doi: 10.1007/s00210-024-03306-1. Epub 2024 Jul 23. PMID: 39042158; PMCID: PMC11582195.
2. Freissmuth, M. and Sitte, H.H. (2018) The Anschluss in 1938 and the Diaspora of Pharmacology in Vienna. Wien Klin Wochenschr (2018) 130:S326–S329. https://doi.org/ 10.1007/ s00508- 018- 1366-4

Vascular dementia revisited: Novel mechanisms and models

Chairs

Prof. Dr. Martina Schmidt — *Molecular Pharmacology, University of Groningen, Netherlands*

Prof. Dr. Bernhard Rauch — *Abteilung Pharmakologie und Toxikologie, Universitätsmedizin Oldenburg, Germany*

Symposium Description

Vascular dementia is increasingly recognized as a complex and multifactorial disorder that extends far beyond the traditional concept of cumulative ischemic injury. Emerging evidence highlights the central role of the neurovascular unit, encompassing endothelial cells, pericytes, glial cells, and drainage pathways, in maintaining cerebral homeostasis and cognitive function. Dysfunction of these tightly coordinated systems contributes to blood-brain barrier breakdown, impaired cerebrovascular reactivity, neuroinflammation, defective protein clearance, and progressive white matter injury - hallmarks of cerebral small vessel disease and vascular cognitive impairment.

This symposium will provide an up-to-date overview of cutting-edge research into the vascular mechanisms underlying dementia, with a particular focus on novel molecular pathways and experimental models. Topics will include mechanosensitive signaling in the cerebral microvasculature, alterations in endothelial and glycocalyx integrity, dysfunction of perivascular and glymphatic clearance systems, and the role of ATP-binding cassette transporters in amyloid and metabolite removal *(we may have to adjust this part according to the actual titles of the designated talks)*. In addition, innovative *in vitro* and *in vivo* models, including advanced cell culture systems and translational animal models *(? - may also need adjustment)*, will be discussed as essential tools for deciphering disease mechanisms and identifying therapeutic targets.

By integrating expertise from vascular biology, neurodegeneration, pharmacology, and translational neuroscience, the symposium aims to redefine our understanding of vascular dementia and to highlight new opportunities for diagnosis, prevention, and treatment. Together, these presentations will underscore how the convergence of vascular dysfunction and impaired brain resilience drives cognitive decline and opens new avenues for intervention.

Proposed Speakers

The table below lists the primary speakers.

Speaker	Affiliation	Topic
Prof. Sebastien Foulquier	*Maastricht, NL*	Cardiometabolic stress disrupts crucial mechanotransduction in the brain microvasculature: relevance for cerebral small vessel disease
Prof. Jens Pahnke	*Oslo, Norway*	ABC Transporters in Neurogenerative Diseases
PD Dr. Jan Wenzel	*Luebeck, Germany*	Brain endothelial Gαq/11 signaling counteracts cognitive decline in aged mice

Speaker	Affiliation	Topic
Prof. Marina Trombetta-Lima	*Groningen, NL*	Blood-brain models: Organoids and iPSC

Selected Key References

Lambrechts SMP, van Oostenbrugge RJ, Foulquier S. TRPV4 in Cerebral Small Vessel Disease: A key interacting partner. Vascul Pharmacol. 2025 Jun;159:107492. doi: 10.1016/j.vph.2025.

Van der Taelen L, Briones AM, Unger T, Staals J, van Oostenbrugge RJ, Foulquier S. Circulating immune cells in cerebral small vessel disease: a systematic review. Biogerontology. 2025 May 5;26(3):101. doi: 10.1007/s10522-025-10250-x.

Santos-García I, Bascuñana P, Brackhan M, Villa M, Eiriz I, Brüning T, Pahnke J. The ABC transporter A7 modulates neuroinflammation via NLRP3 inflammasome in Alzheimer's disease mice. Alzheimers Res Ther. 2025 Jan 27;17(1):30. doi: 10.1186/s13195-025-01673-2.

Hanrieder J, Sun R, Ellis SR, Pahnke J, Savas JN. Considerations for Spatial Omics, Metabolite Analyses, and Tissue-Harvesting Artifacts. J Neurochem. 2025 Dec;169(12):e70315. doi: 10.1111/jnc.70315.

Wenzel J, Schwaninger M. Macrophages and endothelial cells in the neurovascular unit. Acta Neuropathol. 2024 Feb 12;147(1):36. doi: 10.1007/s00401-024-02697-y.

Wenzel J, Badde L, Haas SS, Bonivento C, Van Rheenen TE, Antonucci LA, Ruef A, Penzel N, Rosen M, Lichtenstein T, Lalousis PA, Paolini M, Stainton A, Dannlowski U, Romer G, Brambilla P, Wood SJ, Upthegrove R, Borgwardt S, Meisenzahl E, Salokangas RKR, Pantelis C, Lencer R, Bertolino A, Kambeitz J, Koutsouleris N, Dwyer DB, Kambeitz-Ilankovic L; PRONIA consortium. Transdiagnostic subgroups of cognitive impairment in early affective and psychotic illness. Neuropsychopharmacology. 2024 Feb;49(3):573-583. doi: 10.1038/s41386-023-01729-7. Epub 2023 Sep 22.

Taborda Ribas H, Sogayar MC, Dolga AM, Winnischofer SMB, Trombetta-Lima M. Lipid profile in breast cancer: From signaling pathways to treatment strategies. Biochimie. 2024 Apr;219:118-129. doi: 10.1016/j.biochi.2023.11.008. Epub 2023 Nov 21.

Melo Dos Santos LS, Trombetta-Lima M, Eggen B, Demaria M. Cellular senescence in brain aging and neurodegeneration. Ageing Res Rev. 2024 Jan;93:102141. doi: 10.1016/j.arr.2023.102141. Epub 2023 Nov 27.

Compartmentalized signaling in health an disease: Novel mechanism and models

Chairs

Prof. Dr. Martina Schmidt — *Molecular Pharmacology, University of Groningen, Netherlands*

PD Dr. Enno Klussmann — *Group Leader, Anchored Signalling Max-Delbrück-Centrum für Molekulare Medizin in der Helmholtz-Gemeinschaft, Berlin*

Symposium Description

Compartmentalized cyclic AMP (cAMP) signaling is a fundamental biological mechanism where cells isolate biochemical processes, preventing cross-talk and allowing for highly specific responses to stimuli. Cells achieve this by physically separating messengers and enzymes into microdomains, localizing them *via* scaffolding proteins, and restricting signals to precise intracellular locations. Multi-protein complexes maintained by A-kinase anchoring proteins (AKAPs), proteins kinase A (PKA), exchange protein directly activated by cAMP (Epac), cAMP-elevating seven-transmembrane (7TM) receptors and phosphodiesterases (PDEs) sense cAMP and their complex pertubation correlates with the pathopysiology of chronic disease of the heart, vessels, lung and brain.

This symposium will provide an up-to-date overview of cutting-edge research into compartmentalized cAMP signaling, with a particular focus on novel molecular pathways and experimental models. Topics will include PDE3A signaling in the heart, compartmenlatized signaling in failing hearts, impact of pollutants on cell death mechanisms, AKAP as novel drug targets, and PKA-driven cAMP signaling in compartments *(we may have to adjust this part according to the actual titles of the designated talks)*. In addition, innovative *in vitro* and *in vivo* models, including advanced cell culture systems and translational animal models *- may also need adjustment)*, will be discussed as essential tools for deciphering disease mechanisms and identifying therapeutic targets.

By integrating expertise from heart biology, neurodegeneration, pharmacology, translational neuroscience, lung biology, and regenerative pharmacology the symposium aims to advance our understanding of compartmentalized cAMP signaling and to highlight new opportunities for diagnosis, prevention, and treatment. Together, the presentations will underscore how the convergence of tissue dysfunction and impaired organ resilience drives organ decline and opens new avenues for intervention.

Proposed Speakers

The table below lists the primary speakers.

Speaker	Affiliation	Topic
Dr. Anastasiia Sholokh	*Berlin, Germany*	Hyperactive PDE3A protects from hypertension-induced cardiac injury
Prof. Martina Schmidt or post-doc, Schmidt lab	*Groningen, The Netherlands*	Advanced predictive models in compartmentalized signaling
Prof. Julia Gorelik	*London, UK*	Nano-scaling in cardiomyocytes
Prof. John Scott	*Seattle, U.S.*	AKAP signalling complexes: focal points in space and time

Speaker	Affiliation	Topic
Prof. Matthew Gold	*London, UK*	Protein kinase A: a quirky prototype

Selected Key References

Herberg FW, Paolocci E, Klussmann E. AKAP Signaling: physiological and pathophysiological role and opportunities for novel therapeutic concepts. Physiol Rev. 2026 May 19. doi: 10.1152/physrev.00043.2025. Online ahead of print.PMID: 42155599

Sholokh A, Walter S, Markó L, McMurray BJ, Sunaga-Franze DY, Xu M, Zühlke K, Russwurm M, Bartolomaeus TUP, Langanki R, Qadri F, Heuser A, Patzak A, Forslund SK, Bähring S, Borodina T, Persson PB, Maass PG, Bader M, Klussmann E. Mutant phosphodiesterase 3A protects the kidney from hypertension-induced damage. Kidney Int. 2023 Aug;104(2):388-393. doi: 10.1016/j.kint.2023.04.026.

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Bucko PJ, Scott JD Drugs That Regulate Local Cell Signaling: AKAP Targeting as a Therapeutic Option. Annu Rev Pharmacol Toxicol. 2021 Jan 6;61:361-379. doi: 10.1146/annurev-pharmtox-022420-112134.

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Gold MG. Protein kinase A: a quirky prototype. FEBS J. 2025 Sep;292(18):4800-4803. doi: 10.1111/febs.70176.

Church TW, Tewatia P, Hannan S, Antunes J, Eriksson O, Smart TG, Hellgren Kotaleski J, Gold MG. AKAP79 enables calcineurin to directly suppress protein kinase A activity. Elife. 2021 Oct 6;10:e68164. doi: 10.7554/eLife.68164.

What is new in Immunopharmacology?

Chairs

Prof. Francesca Levi-Schaffer *School of Pharmacy, Faculty of Medicine, The Hebrew University of Jerusalem, Israel*

Prof. Ekaterini (Katerina) Tiligada *Medical School, National and Kapodistrian University of Athens, Greece*

Symposium Description

Immunopharmacology is an area of pharmacology that includes both the treatment of immune related diseases such as allergy, cancer, autoimmune diseases and the use of biologic therapies, such as antibodies, cytokines/chemokines for the treatment of several diseases.

In this symposium it will be learned how harnessing the microbiome, the immunometabolism and the resolution of the disease itself can be successful new avenues to reach a stronger and better immunopharmacological intervention.

In vitro, in vivo and human studies will be considered.

Because of the considered concepts that are relevant to any disease the symposium will bring together pharmacologists, immunologists, researchers in the fields of microbiome, cancer, inflammation, allergy, etc.

Proposed Speakers

The table below lists primary and alternative speakers..

Speaker	Affiliation	Topic
Prof. Laurence Zitvogel	*Gustave Roussy Institute, Université de Paris Saclay, INSERM, Paris, France, e-mail: Laurence.Zitvogel@gustaveroussy.fr*	Is microbiome influencing the success of cancer immunotherapy?
Prof. Luke O'Neill	*Trinity College Dublin, Ireland, e-mail: laoneill@tcd.ie*	Is targeting immunometabolism better than classical anti-inflammatory therapies?
Dr. Joy Edwards-Hicks *(Early Career Researcher)*	*University of Edinburgh, UK e-mail: J.EdwardsHicks@ed.ac.uk*	Aging and Resolution of Inflammation
Prof. Alberto Mantovani	*Istituto Clinico Humanitas, Humanitas University, Milan, Italy The William Harvey Research Institute, Queen Mary University of London, UK*	Are tumor associated macrophages the ideal immunopharmacological target for treating cancer?

Speaker	Affiliation	Topic
	e-mail: Alberto.Mantovani@humanitasresearch.it ; a.mantovani@qmul.ac.uk	
Dr. Emma Börgeson *Early Career Researcher (Alternative for Dr. Joy Edwards-Hicks)*	*Aarhus University, Denmark e-mail: emma.borgeson@biomed.au.dk*	Pro-resolving Lipid Mediators in Cardiometabolic Health
Prof. Helen McShane *(Alternative for Laurence Zitvogel)*	*Nuffield Department of Medicine, University of Oxford, UK e-mail: helen.mcshane@ndm.ox.ac.uk*	BCG: the first FDA-approved cancer immunotherapy and still the first line treatment to prevent recurrence in non-muscle invasive bladder cancer (NMIBC) *Key ref: 1*
Prof. Federica Marchesi *(Alternative for Alberto Mantovani)*	*Istituto di Ricovero e Cura a Carattere Scientifico (IRCCS) Humanitas Research Hospital, University of Milan, Italy e-mail: federica.marchesi@unimi.it*	

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Histamine receptors: learning old dogs new tricks for pharmacological interventions

Chairs

Prof. Dr. Holger Stark — *Institut für Pharmazeutische und Medizinische Chemie, Heinrich Heine University Düsseldorf*

Prof. Dr. Detlef Neumann — *Institut für Pharmakologie, Medizinische Hochschule Hannover, Germany*

Symposium Description

Histamine is a biogenic amine synthesized from L-histidine, stored in mast cells, basophils, and histaminergic neurons. It exerts its effects through four G protein-coupled receptor subtypes: the H_1R ($G_{q/11}$) is the target of classical antihistamines in allergic reactions; the H_2R (G_s) regulates gastric acid secretion and has long been targeted by H_2-blockers; the H_4R ($G_{i/o}$) modulates immune cell function and is potentially relevant in allergy and chronic pruritus, though still in early clinical development.

The H_3R ($G_{i/o}$) occupies a unique position: as a presynaptic auto- and heteroreceptor in the CNS, it regulates the release of histamine as well as numerous other neurotransmitters, including dopamine, acetylcholine, and serotonin. It also displays constitutive activity, meaning inverse agonists can be pharmacologically superior to neutral antagonists.

This broad neuromodulatory function makes the H_3R a compelling target for narcolepsy, ADHD, Alzheimer's disease, and schizophrenia. Pitolisant, an inverse H_3R agonist lacking an imidazole moiety, became the first approved agent of this class in the EU in 2016. Ligand development has progressed from early imidazole-containing scaffolds with metabolic stability issues toward modern imidazole-free compounds with improved pharmacokinetic profiles. Key remaining challenges include the receptor's extensive isoform diversity and the limited clinical success observed so far beyond narcolepsy. New and promising therapeutic approaches with high medical need will be discussed.

This symposium brings together leading scientists working at the interface of histamine biology and neuropharmacology. By integrating cutting-edge medicinal chemistry, bio-sensor development, and human studies, the session will redefine the H_3R as pharmacological target in neurological and neurodegenerative diseases.

Proposed Speakers

The table below lists primary and alternative speakers.

Speaker	Affiliation	Topic
Prof. Dr. Rob Leurs *or PostDoc, Leurs lab*	*Institute of Molecules, Medicines & Systems, Vrije Universiteit Amsterdam, The Netherlands*	Light on histamine receptors
Xavier Ligneau	*Bioprojet-Biotech, Saint-Gregoire, France*	BP1.7881A the first dual histamine H_1-H_4 receptor antagonist: from preclinic to clinical phase 2 studies
Prof. Dr. Holger Stark *or PostDoc, Stark lab*	*Institut für Pharmazeutische und Medizinische Chemie, Heinrich Heine University Düsseldorf, Germany*	Novel glaucoma treatments with histamine H3 receptor antagonists

Speaker	Affiliation	Topic
Dr. Katazyna Szczepanska	*Department of Medicinal Chemistry, Maj Institute of Pharmacology Polish Academy of Sciences, Poland*	When the whole is greater than the sum of its parts: the role of simultaneous modulation of histamine H_3 and sigma-1 receptors in the treatment of chronic pain

Selected Key References

Opportunities and challenges in the therapeutic exploitation of histamine and histamine receptor pharmacology in inflammation-driven disorders.
Tiligada E, Stefanaki C, Ennis M, Neumann D.
Pharmacol Ther. 2024;263:108722. doi: 10.1016/j.pharmthera.2024.108722.

Histamine H3 receptor antagonist/nitric oxide donors as novel promising therapeutic hybrid-tools for glaucoma and retinal neuroprotection.
Sgambellone S, Khanfar MA, Marri S, Villano S, Nardini P, Frank A, Reiner-Link D, Stark H, Lucarini L.
Biomed Pharmacother. 2024;180:117454. doi: 10.1016/j.biopha.2024

Epigenetics meets GPCR: inhibition of histone H3 methyltransferase (G9a) and histamine H3 receptor for Prader-Willi Syndrome
Reiner D, Seifert L, Deck C, Schüle R, Jung M, Stark H
Sci Rep. 2020;10(1):13558. doi: 10.1038/s41598-020-70523-y.

Histamine H3 receptor blockade alleviates neuropathic pain through the regulation of glial cells activation.
Degutis M, Łażewska D, Barut J, Białoń M, Latacz G, Szczepańska K, Pietruś W, Werner T, Karcz T, Stark H, Kreiner G, Kieć-Kononowicz K, Starowicz K, Popiolek-Barczyk K.
Biomed Pharmacother. 2025;183:117850. doi: 10.1016/j.biopha.2025.117850.

Optical control of H1 receptor signaling with a BODIPY-photocaged antihistamine.
Josimovic I, Zheng Y, Wang Z, van der Meer T, Wijtmans M, Vischer HF, Leurs R.
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Precision Pharmacology in Obesity: Mechanisms, Combination Therapies and Future Targets

Chairs

Prof. Francesca Levi Schaffer — *Institute for Drug Research, School of Pharmacy Jerusalem, Israel,*

Prof. Janne Backmann — *University of Helsinki, Helsinki, Finland*

Symposium Description

The mandate to treat obesity has fundamentally shifted from a cosmetic or lifestyle concern to a critical, disease-modifying medical intervention. From a pathophysiological perspective, obesity is not merely an accumulation of excess adipose tissue; it is a state of chronic, low-grade systemic inflammation and metabolic dysfunction that drives multi-organ pathology. In the recent years along with surgery an explosion of new drugs against obesity have been discovered and several are already in use.

This symposium covering the pharmacology of the compounds already in the market, their ability to decrease incidence of other obesity-related diseases and their links with microbiome and their side-effects offers therefore an extremely timely discussion.

Proposed Speakers

The table below lists primary and alternative speakers..

Speaker	Affiliation	Topic
Prof. Timo Müller	*Helmholtz Munich / LMU Munich, Germany* *e-mail:* *timodirk.mueller@helmholtz-munich.de*	Poly-agonist Therapies and the Future of Anti-Obesity Pharmacology
Prof. Lisbeth van Rossum	*Erasmus MC Rotterdam, Netherlands* *e-mail:* *e.vanrossum@erasmusmc.nl .*	Personalized Obesity Treatment in the Era of GLP-1 Therapies
Assistant Prof. Lærke Smidt Gasbjerg *(Early career researcher)*	*University of Copenhagen, Denmark* *e-mail: lsg@sund.ku.dk*	Incretin Pharmacology: From Physiology to Multi-Receptor Agonists
Prof. Karine Clément	*Sorbonne University / INSERM, France* *e-mail:* *karine.clement@inserm.fr.*	Adipose Tissue Biology and Novel Therapeutic Targets in Obesity
Prof. Christoffer Clemmensen *(Alternative for Timo Müller)*	*University of Copenhagen, Denmark* *e-mail: chc@sund.ku.dk*	Peptide therapeutics and cardiometabolic pharmacology in obesity
Prof. Kirsi Pietiläinen *(Alternative for Bart Staels)*	*University of Helsinki, Finland* *e-mail:* *kirsi.pietilainen@helsinki.fi*	Obesity mechanisms and digital obesity care
Prof. Bart Staels	*University of Lille, Lille*	Metabolic pharmacology and nuclear

Speaker	Affiliation	Topic
(Alternative for Karine Clement)	*University Hospital, Inserm, Pasteur Institute of Lille, France* *e-mail: bart.staels@pasteur-lille.fr*	receptor biology in obesity

Selected Key References

Targeting cyclic nucleotide signaling for modulation of inter-organ communication and cardiometabolic disease

Chairs

Prof. Dr. Miriam M. Cortese-Krott *Institut für Pharmazie, Universität Tübingen, Germany*

Prof. Dr. Alexander Pfeifer *Institut für Pharmakologie und Toxikologie, Universität Bonn, Germany*

Symposium Description

Cardiometabolic diseases — including obesity, type 2 diabetes, and heart failure — are increasingly understood as systemic conditions driven by complex cell cell and inter-organ communication networks. Mounting evidence indicates that cyclic nucleotide signalling pathways (cGMP and cAMP) extend well beyond classical secondary messenger role in intracellular regulation and participate in non-canonical cell-cell communication and intra-organ communication, and more importantly became central to the control of systemic metabolism.

Recent advances in FRET-based biosensor technology now permit real-time, compartment-resolved monitoring of cGMP dynamics in living cells and tissues and revealed novel non canonical roles of cGMP and cAMP in cell-cell communication and tissue metabolic homeostasis. In this context pharmacological targeting of soluble guanylyl cyclase (sGC), particulate guanylyl cyclases, phosphodiesterases (PDEs), and downstream effectors such as PKG and PKA represents a rapidly evolving therapeutic frontier in metabolic disorders.

This symposium brings together leading scientists working at the interface of cyclic nucleotide pharmacology, vascular biology, and metabolism. By integrating cutting-edge biosensor approaches, cell-type-specific genetic models, and human studies, the session will redefine cyclic nucleotides as pharmacological targets in cardiometabolic disease and inter-organ communication.

Proposed Speakers

The table below lists primary and alternative speakers..

Speaker	Affiliation	Topic
Prof. Kjetil Wessel Andressen *or Dr. Gaia Calamera* [PostDoc, Andressen/Levy lab]	*Dept. of Pharmacology, University of Oslo & Oslo University Hospital, Norway*	FRET-based cGMP biosensors: real-time monitoring of compartmented cyclic nucleotide signalling in cardiometabolic disease(1) *Key ref: Calamera et al., Commun Biol 2019 (PMID 31701023)*
Prof. Dr. Alexander Pfeifer *or PostDoc, Pfeifer lab*	*Institut für Pharmakologie und Toxikologie, Universität Bonn, Germany*	Spatial and temporal resolution cGMP signalling in adipose tissue and metabolic adaptation(2)
Prof. Brant Isakson	*University of Virginia, Charlottesville, USA*	NO/cGMP signaling in cross talk of lymphatics and cardiomyocytes in HFpEF(3; 4)
Prof. Jon Lundberg	*Dept. Physiology and Pharmacolgy, Karolinska Institutet*	Nitrate supplementation and systemic cGMP signaling in cardiometabolic health.
Prof. Takaaki Akaike	*Dept. of Environmental Medicine & Molecular Toxicology, Tohoku*	eNOS as endogenous source of persulfide/sulfur signalling in intraorgan communication and cardiometabolic

Speaker	Affiliation	Topic
	University, Sendai, Japan	disease(5; 6)
Prof. Robert Lukowski *or PostDoc, Lukowski lab*	*Institut für Pharmazie, Universität Tübingen, Germany*	cGMP signalling in adipose tissue: focus on BK channel (7; 8)
Prof. Dr. Miriam M. Cortese-Krott	*Institut für Pharmazie, Universität Tübingen, Germany*	NO/cGMP signalling and endothelial heterogeneity in cardiometabolic disease(9)

Selected Key References

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9. Leo F, Suvorava T, Heuser SK, Li J, LoBue A, et al. 2021. Red Blood Cell and Endothelial eNOS Independently Regulate Circulating Nitric Oxide Metabolites and Blood Pressure. *Circulation* 144:870–89

Genome Editing for Precision Pharmacology: Engineering the Next Generation of Therapeutics

Chairs

Prof. Dr. Marc Freichel *Managing Director, Dept. of Pharmacology, Heidelberg University, Germany*

Dr. Duran Sürün *Head of Technology Platform „Genome editing in preclinical disease models“ Health + Life Science Alliance Heidelberg Mannheim & Dept. of Pharmacology, Heidelberg University https://sueruen-lab.com*

The organizers bring complementary expertise in the evolution and engineering of genome-editing tools and their application in preclinical animal and iPSC-based disease models, ensuring the design of an attractive symposium that bridges molecular innovation to translational and therapeutic applications.

Symposium Description

Genome editing has begun to redefine pharmacology, enabling precise alterations at the genomic level and giving rise not only to the generation of disease models and studying the causality of human genetic variants, but also for future approaches in Precision Pharmacology, a discipline focused on engineering therapies that match the molecular signatures and causes of monogenic disease but also to interfere with disease-causing pathways in multifactorial common diseases.

Progress in CRISPR/Cas systems, base editing, and prime editing allows precise genetic modifications. Translating these into clinical applications requires innovation in specificity, efficiency, and delivery, combined with a deep mechanistic understanding of cellular systems.

This symposium will bring together leading international experts to discuss how genome editing is evolving from a powerful experimental approach into a precise and reliable pharmacological modality, integrating technological development towards therapeutic applications.

Key topics will include:

- Engineering and optimization of genome editing systems
- Precision targeting and improvement of editing specificity and safety
- Protein engineering and directed evolution of editing tools
- Genome editing in hematopoietic systems and organoid models
- In vivo genome editing and therapeutic applications
- Translational challenges and regulatory perspectives in Precision Pharmacology

Proposed Speakers

The table below lists primary and alternative speakers.

Speaker	Affiliation	Topic
Prof. Dr. Waseem Qasim	*UCL Great Omond Street Institute of Child Health, London, GB*	Ex vivo genome engineering in CAR T cell therapies
Prof. Dr. Selim Corbacioglu	*Pädiatrische Hämatologie, Regensburg, Germany*	CRISPR-Cas9 Gene Editing for Sickle Cell Disease and β-Thalassemia
Prof. Dr. Julian Grünewald	*LMU Munich, Germany*	CRISPR-based gene editing in cardiovascular disease
Prof. Dr. Gerald Schwank	*University of Zurich, Switzerland*	Engineering of Genome Editing Tools and Establishment of in vivo Genome Editing Approaches in nonhuman primates
Prof. Dr. Frank Buchholz	*TU Dresden, Germany*	Genome engineering and novel editing approaches to treat HIV
Laura Sepp-Lorenzino, Ph.D.	*Executive Vice President, CSO at Intellia Therapeutics (USA)*	
Prof. Dr. Toni Cathomen	*University Medical Center Freiburg, Germany*	Improving the Safety of Genome Editing: Off-target Assessment and Clinical Translation

For a keynote lecture accompanying the symposium, we would ask

Speaker	Affiliation	Topic
Prof. Dr. Kiran Musunuru	*University of Pennsylvania, USA*	In vivo genome editing (personalized gene editing) and cardiovascular applications
Prof. Dr. Emmanuelle Charpentier	*Max Planck Unit for the Science of Pathogens, Berlin, Germany*	CRISPR biology and translational applications

Expected Impact

This symposium will highlight genome editing as a key driver of Precision Pharmacology, emphasizing the transition from naturally derived systems toward engineered, application-focused molecular tools. Attendees will gain an integrated view of emerging genome-editing strategies that promise to redefine drug development—advancing toward precise, mechanism-based, and potentially curative therapeutic approaches. The session will foster interdisciplinary dialogue across molecular biology, pharmacology, and clinical research, bridging fundamental innovation with therapeutic translation.

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Teaching pharmacology”? Different perspectives on current teaching/learning and future challenges

Chairs

Prof. Dr. Daniela Yildiz (Saarland University, Center for Molecular Signaling, Experimental and Clinical Pharmacology and Toxicology; Homburg, DE)

Prof. Dr. Jan Matthes (University of Cologne, Medical Faculty, Centre of Pharmacology/Student Dean’s Office; Cologne, DE)

Symposium Description

Pharmacology is a multi-faceted, interprofessional discipline aimed at the development and implementation of safe and effective drug therapy. The symposium is going to provide a forum for discussing current and future approaches to teaching pharmacology, with a particular emphasis on integrated, clinically relevant, and interdisciplinary learning. As pharmacology teaching increasingly serves as a bridge between basic sciences and patient-centred therapeutic decision-making, the symposium seeks to promote exchange across the major sub-disciplines of pharmacology, including basic, clinical, translational, and experimental pharmacology, as well as pharmacovigilance and personalized medicine.

A further objective is to explore the intersections between pharmacology and other healthcare professions, especially in the context of interprofessional education, prescribing competence, medication safety, and rational pharmacotherapy. Contributions may address innovative teaching strategies, digital and simulation-based learning, competency-based curricula, and novel approaches to assessment in undergraduate and postgraduate medical education.

In addition, the symposium intends to foster dialogue among participants from different European countries and regions, acknowledging the diversity of educational traditions, healthcare systems, and regulatory frameworks. By bringing together a broad range of perspectives, the symposium aims to contribute to ongoing discussions on the future of pharmacology education and its role in

promoting safe, evidence-based, and patient-oriented pharmacotherapy.

Proposed Speakers

Speaker	***Affiliation***	***Topic***
Clare Guilding	Newcastle University, School of Medicine, Faculty of Medical Sciences; Newcastle, UK	The role of pharmacology societies in developing the identity of pharmacology educators
Susanna Wallerstedt	University of Gothenburg, Institute of Neuroscience and Physiology, Department of Pharmacology; Gothenburg, SE	From Pharmacology Knowledge to Safe Prescribing Practice
Jitka Rychlickova	Masaryk University, Faculty of Medicine, Department of Pharmacology; Brno, CZ Alternative: Zsófia Gulyás-Onódi (Semmelweis University, Dep Pharmacology & Pharmacotherapy; Budapest, HU)	Rethinking Pharmacology Teaching: Engagement, Integration and Clinical Relevance
Jelle Tichelaar	Amsterdam UMC, Amsterdam Public Health; Amsterdam, NL Alternative: Anna Diewerke Pranger (Department of Clinical Pharmacy and Toxicology, Leiden University Medical Center, Leiden, NL)	Integrating Therapeutics and Prescribing into Medical Curricula
Ronja Woltersdorf	Universität Bonn, Klinische Pharmazie; Bonn, DE Alternative: Miriam Cortese-Krott (Eberhard Karls Universität Tübingen, Tübingen, DE)	Real Condition Teaching - more than Room-of-Horrors
Emilio J. Sanz	University of La Laguna, Department of Physical Medicine and Pharmacology, San Cristóbal de La Laguna, ES Alternative: Dimitrios Kouavelas (Aristotle University of	Towards a European Framework for Prescribing Education

	Thessaloniki, Thessaloniki, GR)	

Framework 6 talks à 8 min plus 4 min discussion each, 18 min plenary discussion

Challenges in drug therapy for atrial fibrillation

Chairs

Prof. Godfrey Smith *Cardiovascular Physiology, Director of Innovation, and Enterprise (Cardiovascular & Metabolic Health), Glasgow University Scotland* (Godfrey.Smith@glasgow.ac.uk)

Prof. Ursula Ravens *Institute of Experimental Cardiovascular Medicine University clinic Freiburg, Germany (Ursula.Ravens@uniklinik-freiburg.de)*

Symposium Description

Despite substantial progress in understanding the cardiovascular pathophysiology of arrhythmias in recent decades, pharmacological treatment of cardiac arrhythmias remains challenging, mainly because of the limited availability of effective and safe antiarrhythmic drugs. Though interventional ablation procedures have a high intrinsic success rate, the sheer prevalence of common arrhythmias like atrial fibrillation limits the feasibility of global treatment using this approach alone. Consequently, there remains a significant unmet need of novel, safe and effective pharmacological strategies.

Atrial fibrillation is characterised by substantial functional and structural remodelling that impedes identification of promising targets for new antiarrhythmic compounds. Despite these difficulties novel drug targets have emerged that are going to be discussed in this symposium.

Proposed Speakers

The table below lists primary and alternative speakers.

Speaker	Affiliation	Topic
Prof. David Filgueras (*david.filgueiras@cnic.es*)	Spanish National Centre for Cardiovascular Research, Madrid, Spain	Whole animal models to study the role of different cardiac cell types in atrial fibrillation (1)
Dr. Rémi Peyronnet (*remi.peyronnet@uniklinik-freiburg.de*)	Institute of Experimental Cardiovascular Medicine, University Clinic Freiburg, Germany	Role of mechanosensitive ion channels in atrial fibrillation/cardiac arrhythmias (2,3)
Prof. Niels Voigt (*niels.voigt@med.uni-goettingen.de*) *or: Prof. Dobromir Dobrev (dobromir.dobrev@uk-essen.de)*	Dept. Pharmacology, Mannheim University, Germany *Dept. Pharmacology, University Duisburg-Essen,*	Cytosolic calcium handling in AF as potential drug target (4,5) *(6)*

	Germany	
Prof. Blanca Rodriguez (*blanca.rodriguez@cs.ox.ac.uk*) *or: Prof. Jordi Heijman (jordi.heijman@medunigraz.at)*	Computational Medicine, Dept. Computer Science University of Oxford, United Kingdom *(Institute of Medical Physics and Biophysics, University of Graz, Austria)*	Novel computer models of human cardiomyocytes for the investigation of cardiac arrhythmias (7, 8) *(9)*
cand. PhD Anthony Coté (*anthony.cote@uniklinik-freiburg.de*)	Institute of Experimental Cardiovascular Medicine, University Clinic Freiburg, Germany	Antiarrhythmic drug testing in human cardiac tissue slices (10, 11)
Prof. A. John Camm (*jcamm@citystgeorges.ac.uk*) (*or Prof. Ulrich Schotten) (schotten@maastrichtuniversity.nl)*	St Georges Hospital, University of London, United Kingdom *(Fysiologie, Cardiovascular Medicine, Maastricht, Netherland)*	Novel antiarrhythmic drugs in the pipeline (12, 13) *(14)*

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From Drug Discovery Platforms to Epigenomic Interventions

Session Chairs

Prof. Dr. Niels Voigt | Institute of Pharmacology and Toxicology, University Medical Center Göttingen, Germany | niels.voigt@med.uni-goettingen.de

Prof. Dr. Friederike Cuello | Institute of Experimental Pharmacology and Toxicology, UKE Hamburg-Eppendorf | f.cuello@uke.de

Symposium Description

Cardiovascular diseases remain the leading cause of morbidity and mortality worldwide, yet cardiac pharmacology is undergoing a profound conceptual transformation. Alongside classical small-molecule drugs, a new generation of tools such as viral gene therapies, epigenetic editors, and engineered cardiac tissues are emerging. These can be considered as dose-controllable, mechanism-specific interventions that fulfil the core criteria of pharmacological tools.

This symposium brings together five cutting-edge developments that collectively redefine what a cardiac pharmacological platform or intervention can be. The session is structured around two complementary topics: innovative drug discovery and testing platforms and emerging therapeutic tools.

Learning Objectives

By the end of this session, participants will be able to:

- Evaluate engineered heart muscle as a dose-controllable pharmacological tool for heart failure therapy, including its first-in-human clinical application
- Describe AAV-based suppress-and-replace gene therapy as a novel pharmacological strategy for inherited channelopathies (LQT1, SQT1), including its translational validation in transgenic rabbit models
- Explain how high-throughput automated patch-clamp electrophysiology accelerates the discovery and safety screening of cardiac drugs
- Apply computational cardiomyocyte modelling to predict drug effects and arrhythmia mechanisms across sexes and disease contexts
- Identify chamber-specific cis-regulatory elements and epigenomic silencing strategies as emerging pharmacological targets in cardiac disease

Proposed Speakers

Speaker	Affiliation	Talk Title	Theme
Wolfram Zimmermann w.zimmermann@med.uni-goettingen.de	University Medical Center Göttingen, Germany	Engineered heart muscle as a pharmacological tool in heart failure	Therapeutic platform
Katja Odening katja.odening@unibe.ch	University of Bern, Switzerland	AAV-mediated suppress-and-replace gene therapy for inherited cardiac channelopathies	Gene therapy intervention
Sobitov, Izzatullo izzatullo.sobitov@med.uni-goettingen.de	University Medical Center Göttingen, Germany	High-throughput electrophysiology in cardiac drug discovery	Drug screening platform
Jordi Heijman jordi.heijman@medunigraz.at	University Medical Center Graz, Austria	Computational modelling of drug effects in cardiac arrhythmias	In silico platform
Ralf Gilsbach Ralf.Gilsbach@cardioscience.uni-heidelberg.de	University Medical Center Heidelberg, Germany	Chamber-specific chromatin architecture and cis-regulatory elements as targets in cardiac disease	Epigenomic intervention

Selected Key References

1. Zimmermann WH et al. *Engineered heart muscle allografts for heart repair in primates and humans.* Nature 639:503–511 (2025). DOI: 10.1038/s41586-024-08463-0

2. Nimani S, Bains S, … Heijman J, … Ackerman MJ, Odening KE. *AAV9-mediated KCNH2 suppression-replacement gene therapy in a transgenic rabbit model of type 1 short QT syndrome.* Eur Heart J 47(2):199–213 (2026). PMID: 40884219

3. Bains S, Giammarino L, … Ackerman MJ, Odening KE. *KCNQ1 suppression-replacement gene therapy in transgenic rabbits with type 1 long QT syndrome.* Eur Heart J 45(36):3751–3763 (2024). PMID: 39115049

4. Seibertz F*, Sobitov I* et al. *A modular method for high-throughput measurement of ion channel currents in cardiac myocytes.* Nat Protoc (2026). DOI: 10.1038/s41596-026-01351-z [*equal contribution]

5. Heijman J et al. *T-World Virtual Human Cardiomyocyte: Development, Validation, and Cell Arrhythmogenesis.* Circ Res (2025). PMID: 41944014

6. Heijman J et al. *[Title TBC].* Circ Res (2025). PMID: 41948815

7. Haydar S, Bednarz R, … Sobitov I, … Voigt N, Streckfuss-Bömeke K, Gilsbach R. *Chamber-specific chromatin architecture guides functional interpretation of disease-associated cis-regulatory elements in human cardiomyocytes.* Nat Commun 17:117 (2026). DOI: 10.1038/s41467-025-67220-7

Proposed Session Format

Slot	Duration	Speaker / Content
Introduction	5 min	Chairs: Voigt & Cuello
Talk 1	15 min	Wolfram Zimmermann
Talk 2	15 min	Katja Odening
Talk 3	15 min	Izzatullo Sobitov
Talk 4	15 min	Jordi Heijman
Talk 5	15 min	Ralf Gilsbach
Panel Discussion	15 min	All speakers + audience
Total	95 min	

Symposium Title:

Pharmacological Challenges in Parkinson's Disease: From Systemic Risk Factors to Dopaminergic Vulnerability

Society: APHAR

Proposed chairs:

Chair 1: Thomas Steinkellner (Medical University of Vienna; Austria)
Chair 2: Damiana Leo (Université de Picardie Jules Verne; France)

Symposium Description:

As a consequence of population aging, the incidence and prevalence of Parkinson's disease (PD) are steadily increasing and are projected to rise substantially over the next decades. Despite this growing burden, current pharmacotherapies remain largely symptomatic, often lose efficacy over time, and fail to prevent or slow neurodegeneration. This therapeutic gap reflects an incomplete understanding of both systemic risk factors and cellular mechanisms that contribute to disease onset and progression.
This symposium brings together pharmacologists and neuroscientists from different European institutions (Austria, France and Spain), each contributing complementary perspectives on PD-relevant biology, spanning systemic influences, neuronal vulnerability, and emerging therapeutic strategies.

- **Aitak Farsi** will discuss how nutrition and aging—two major systemic determinants of brain health—interact to influence neurodegenerative processes.
- **Miquel Vila** will address the role of neuromelanin in dopamine neurons and its contribution to neuronal vulnerability and degeneration in PD[1,2].
- **Thomas Steinkellner** will focus on transmitter co-release and effects on dopamine neuron vulnerability in PD[3,4].
- **Damiana Leo** will present work on dopamine deficiency syndromes and explore the potential of memantine as a novel therapeutic approach[5].

Together, these talks provide an integrated view ranging from systemic risk factors (nutrition and aging) to cellular and molecular mechanisms of dopaminergic dysfunction, as well as emerging pharmacological strategies.

Proposed speakers:

Speaker 1: Ass. Prof. Aitak Farzi (Medical University of Graz; Austria) – aitak.farzi@medunigraz.at

Title: Targeted nutritional interventions and brain health

Speaker 2: Prof. Miquel Vila (Vall d'Hebron Research Institute; Spain) - miquel.vila@vhir.org

Title: Role of age-dependent neuromelanin accumulation in Parkinson's disease

Speaker 3: Ass. Prof. Thomas Steinkellner (Medical University of Vienna; Austria) – thomas.steinkellner@meduniwien.ac.at

Title: Role of neurotransmitter transporters in the selective vulnerability of dopamine neurons in Parkinson's disease

Speaker 4: Dr. Damiana Leo (Université de Picardie Jules Verne; France) - damiana.emanuele.leo@u-picardie.fr

Title: Dopamine transporter deficiency syndrome: from synaptic dysfunction to mechanism-based pharmacology

Selected Key References:

1. Filimontseva, A., Fu, Y., Vila, M. & Halliday, G.M. Neuromelanin and selective neuronal vulnerability to Parkinson's disease. *Trends Neurosci* **48**, 445-459 (2025).
2. Gonzalez-Sepulveda, M.*, et al.* In vivo reduction of age-dependent neuromelanin accumulation mitigates features of Parkinson's disease. *Brain* **146**, 1040-1052 (2023).
3. Steinkellner, T.*, et al.* Dopamine neurons exhibit emergent glutamatergic identity in Parkinson's disease. *Brain* **145**, 879-886 (2022).
4. Srinivasan, S., Pifl, C. & Steinkellner, T. Vesicular glutamate transporter VGLUT2 expression emerges in substantia nigra dopamine neurons in mouse models of parkinsonism in the absence of neurodegeneration. *Br J Pharmacol* **183**, 2123-2138 (2026).
5. Caffino, L.*, et al.* Memantine-induced functional rewiring of the glutamate synapse in the striatum of dopamine transporter knockout rats. *Br J Pharmacol* **182**, 1377-1393 (2025).