



4th GERMAN PHARM-TOX SUMMIT

85. Jahrestagung
der Deutschen Gesellschaft für experimentelle und
klinische Pharmakologie und Toxikologie (DGPT)
und 21. Jahrestagung des Verbundes Klinische
Pharmakologie (VKliPha)
in Zusammenarbeit mit der AGAH



PROGRAMME

25–28 FEBRUARY
STUTTGART | 2019

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Hosting societies

German Society for Experimental und Clinical Pharmacology and Toxicology (DGPT)
(Deutsche Gesellschaft für experimentelle und klinische Pharmakologie
und Toxikologie e. V.)

www.dgpt-online.de



Association of Clinical Pharmacology (VKliPha)
(Verbund Klinische Pharmakologie in Deutschland e. V.)

www.vklipha.de



Association for Applied Human Pharmacology (AGAH)
(Arbeitsgemeinschaft für Angewandte Humanpharmakologie e. V.)

www.agah.eu



Conference chairs

Prof. Dr. Matthias Schwab

Dr. Margarete-Fischer-Bosch-Institute of Clinical Pharmacology
Stuttgart

Prof. Dr. Holger Barth

Institute of Pharmacology and Toxicology
University of Ulm, Medical Center

Scientific committee

Prof. Dr. Holger Barth (Ulm)

PD Dr. Kurt Bestehorn (Duesseldorf)

Dr. Andrea Kliewer (Jena)

Dr. Barbara Schug (Oberursel)

Prof. Dr. Matthias Schwab (Stuttgart, Tuebingen)

Prof. Dr. Thomas Wieland (Mannheim)

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Dear colleagues and friends,

It is our great honour and pleasure to welcome you at the 4th German Pharm-Tox Summit from 25–28 February 2019 in Stuttgart. Traditionally, this is a joint conference organized and held by the German Society for Experimental and Clinical Pharmacology and Toxicology (DGPT) together with the Association of Clinical Pharmacology (VKliPha) and the Association for Applied Human Pharmacology (AGAH).

To make the 4th German Pharm-Tox Summit an excellent scientific congress presenting cutting edge science from experimental and clinical Pharmacology and Toxicology, for the first time two Universities, namely Tuebingen and Ulm, also represented by the two Congress Presidents from the German Societies of Clinical Pharmacology and Toxicology, respectively, joint together with the Dr. Margarete Fischer-Bosch-Institute of Clinical Pharmacology in Stuttgart.

We are confident that the three plenary talks as well as the various symposia and the short talk sessions will and provide exciting insight on hot topics of pharmacology, clinical pharmacology, and toxicology, but also allow to look across the borders of the own research topics.

Welcome to Stuttgart!

Prof. Dr. Matthias Schwab
Congress President DGPT

Prof. Dr. Holger Barth
President GT
Congress President DGPT

Prof. Dr. Thomas Wieland
President DGPT, DGP

Prof. Dr. Ingolf Cascorbi
President DGKliPha

PD Dr. Kurt Bestehorn
Speaker VKliPha

Prof. Dr. Georg Wensing
President AGAH



Reutlingen	Heilbronn	Ulm
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<p>11:00–17:00 Advanced course in toxicology</p> <p style="text-align: right;">p. 11</p>	<p>11:00–17:00 Advanced course in computational pharmacology and toxicology</p> <p style="text-align: right;">p. 11</p>	<p>13:00–17:00 Advanced course in pharmacology Pharmakologielehre entsprechend dem Nationalen Kompetenzbasierten Lernzielkatalog Medizin (NKLM)</p> <p style="text-align: right;">p. 12</p>
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Pharmacology (DGP)	Poster session
Toxicology (GT)	VKliPha
Clinical Pharmacology (DGKliPha)	Forum Young Scientist
General	AGAH Workshop
Industry	Social programme



König-Karl-Halle	Bertha-Benz-Saal	Karlsruhe	Reutlingen
08:30–09:30			
Short talks			
Toxicology – Organ toxicology p. 13	09:00–10:30	09:00–10:30	09:00–10:30
09:30–10:30	Short talks	Short talks	Short talks
Short talks	Pharmacology – Cardiac pharmacology and treatment I p. 14	Pharmacology – Immunopharmacology p. 14	Clinical pharmacology: Disease models and drug development p. 15
Toxicology – Food toxicology p. 13			
10:45–11:00			
Opening ceremony p. 16			
11:00–11:45			
Plenary lecture I			
p. 16			
	12:00–12:45	12:00–12:45	11:45–13:00
	Meet the company	Meet the company	Special event
	p. 76	p. 76	Toxicology in Germany 2019 p. 16
12:45–13:30			
Get together			
within the industrial exhibition p. 68			
13:30–14:30			
Poster session I • List-Saal/Empore			
			p. 39
14:30–16:00			
Symposium 1			
Paul Martini Symposium			
Prävention und Management immunolog. Nebenwirkungen bei innovativen Therapieansätzen p. 17			
16:15–17:45	16:15–17:45	16:15–17:45	16:15–17:45
Symposium 2	Symposium 3	Symposium 4	Symposium 5
Novel psychoactive substances – toxicokinetics and toxicodynamics p. 17	Novel aspects of molecular imaging p. 18	Publication 4.0 – Wie publizieren wir in der Zukunft? p. 18	Guideline-based polypharmacy – challenges and solutions p. 18
17:45–19:15	17:45–19:15	17:45–19:15	17:45–19:15
General meeting	General meeting	General meeting	General meeting
GT p. 19	DGP p. 19	DGKliPha p. 19	AGAH p. 19
19:30–21:00			
Social evening Forum Junge Wissenschaft – Science slam			
Café Félix p. 68			



König-Karl-Halle	Bertha-Benz-Saal	Karlsruhe	Reutlingen	Heilbronn
08:30–09:30				
Short talks				
Toxicology – Biotransformation and toxicokinetics p. 20	09:00–10:30	09:00–10:30	09:00–10:30	09:00–10:45
09:30–10:30	Short talks	Short talks	Short talks	AGAH Workshop
Short talks	Pharmacology: Cardiac pharmacology and treatment II p. 21	Pharmacology: G-protein coupled receptors p. 21	Clinical pharmacology: Clinical pharmacology and drug therapy p. 22	Morning session
Toxicology: Genotoxicity p. 20				p. 29
11:00–11:45				
Plenary lecture II				
p. 23				
	12:00–13:00			
	Industrial symposium			
	p. 76			
				12:15–17:00
				AGAH Workshop
				Afternoon session
13:00–14:00	Poster session II • List-Saal/Empore			Introduction to biomarkers and pharmacodynamic models and their use in drug development p. 29
	p. 52			
14:00–15:00	14:00–15:00	14:00–15:00	14:00–15:00	
Short talks	Short talks	Short talks	Symposium 6	
Toxicology – Toxins I p. 23	Pharmacology – Ion channels p. 24	Pharmacology – Membrane transporters p. 24	IMI-initiatives meet pharmacology p. 25	
15:30–17:00	15:30–17:00	15:30–17:00	15:30–17:00	
Symposium 7	Symposium 8	Symposium 9	Symposium 10	
Novel approaches for detection and neutralization of biological toxins p. 25	Ion channels as new drug targets p. 26	Organ on a chip p. 26	State of the art of cardiovascular diseases p. 27	
17:15–18:45	17:15–18:45		17:15–18:45	
Symposium 11	Symposium 12		Symposium 13	
Computational toxicology p. 27	Joint-Symposium DGPT – SSPT		IUPHAR symposium	
	Novel drug targets in the immune system p. 28		p. 28	
18:45–19:15				
Award ceremony				
p. 28				
19:45–23:30				
Social evening				
Restaurant Plenum				p. 68



König-Karl-Halle	Bertha-Benz-Saal	Karlsruhe	Reutlingen
08:30–09:30			
Short talks			
Toxicology – Toxic compounds p. 31	09:00–10:30	09:00–10:30	09:00–10:30
09:30–10:30	Short talks	Short talks	Short talks
Short talks	Pharmacology – Cancer pharmacology and treatment p. 32	Pharmacology – GTP-binding proteins p. 32	Clinical pharmacology: Pharmacogenomics and personalized medicine p. 33
Toxicology – Toxins II p. 31			
10:45–11:30			
Plenary lecture III			
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11:45–13:15	11:45–13:15	11:45–13:15	11:45–13:15
Symposium 14	Symposium 15	Symposium 16	Symposium 17
Rauchen 2.0 – neue Tabak- und Tabakersatzprodukte p. 34	Non-canonical GPCR signaling p. 35	Scientific and regulatory aspects of ethnicity and their consequences for clinical drug development p. 35	Pharmakologie-historisches Forum p. 35
13:30–15:00	13:30–15:00		13:30–15:00
Symposium 18	Symposium 19		Symposium 20
Kinases as therapeutic targets in the cardiovascular system p. 36	Novel aspects of Alzheimer's dementia p. 36		Precision medicine and drug development p. 37
15:00–15:30			
Poster award ceremony and closing p. 37			

Pharmacology (DGP)	Poster session
Toxicology (GT)	VKliPha
Clinical Pharmacology (DGKliPha)	Forum Young Scientist
General	AGAH Workshop
Industry	Social programme



Monday, 25 February

10:00–17:00 Prüfungen in der Toxikologie
Turm B

17:00–18:00 Vorstandssitzung der Deutschen Gesellschaft für Pharmakologie (DGP)
Reutlingen

17:00–18:30 Erweiterte Vorstandssitzung der Gesellschaft für Toxikologie (GT)
Heilbronn

18:00–21:00 Treffen der AG Planmäßige Professoren der Experimentellen und
Klinischen Pharmakologie und Toxikologie
Robert-Bosch-Krankenhaus · Atrium · Raum E109
Achtung! Anderer Ort Auerbachstraße 112 · 70376 Stuttgart

Tuesday, 26 February

13:00–14:00 AK Computational Toxicology
Reutlingen AK 3R Praxis/Alternativmethoden

Wednesday, 27 February

13:00–14:00 AK Carcinogenese
Reutlingen

11:30–13:00 Editorial board meeting in Nauyn-Schmiedebergs Archives of Pharmacology
Turm B

13:00–14:00 Präsidiumssitzung und Mitgliederversammlung der Deutschen Gesellschaft
Turm B für Experimentelle und Klinische Pharmakologie und Toxikologie (DGPT) e. V.


11:00–17:00 Advanced course in toxicology


Reutlingen

Chair W. Aulmann (Monheim a. R.)

11:00 Begrüßung/Einführung

W. Aulmann (Monheim a. R.), H. Foth (Halle a. d. S.)

11:10 Herausforderungen bei der Zulassung von „Herbal Medicinal Products“

R. Länger (Vienna/AT)

11:45 Risikobewertung von „Botanicals“ und „botanical preparations“:

das Vorgehen der EFSA

U. Gundert-Remy (Berlin)

12:20 Bewertung des kanzerogenen Risikos von Pyrrolizidinalkaloiden

R. Stahlmann (Berlin)

13:00 Mitgliederversammlung

14:00 Bewertung des kanzerogenen Risikos von Eugenol

J. Wiesner (Bonn)

14:35 Standards in Anbau und Produktion von Herbal Medicinal Products

B. Steinhoff (Bonn)

14:00 Podiumsdiskussion

Moderation G. Degen (Dortmund)

U. Gundert-Remy (Berlin), H. Foth (Halle a. d. S.), R. Länger (Wien/AT)

R. Stahlmann (Berlin), B. Steinhoff (Bonn), J. Wiesner (Bonn)

11:00–17:00 Advanced course in computational pharmacology and toxicology

Heilbronn

Chairs L. T. Anger (Frankfurt a. M.), U. Fuhr (Cologne)

11:00 Physiology based pharmacokinetic simulations in drug development to support drug interactions and paediatric clinical trials

S. Läger (Duesseldorf)

11:50 Applications of physiologically based toxicokinetic monitoring (PBTK) for *in vitro* to *in vivo* extrapolation (IVIVE) – a case study with potential endocrine disrupting compounds

E. Fabian (Ludwigshafen a. R.)



- 13:30 Computational prediction of the pharmacological activity of small molecules: virtual screening and mode of action prediction
J. Kirchmair (Hamburg; Bergen/NO)
- 14:20 *In silico* toxicology – computational methods for prediction of toxicity endpoints
L. T. Anger (Frankfurt a. M.)
- 15:25 Systems toxicology – possibilities and limitations
J. G. Hengstler (Dortmund)
- 16:15 Quantitative systems pharmacology – simulating cellular drug responses within a whole-body context
L. Küpfer (Leverkusen)

13:00–17:00 Advanced course in pharmacology

Ulm **Pharmakologielehre entsprechend dem Nationalen Kompetenzbasierten Lernzielkatalog Medizin (NKLM)**

Pharmakologielehre entsprechend dem Nationalen Kompetenzbasierten Lernzielkatalog Medizin (NKLM)
R. Seifert (Hannover)

Der NKLM stellt die Grundlage für die Entwicklung des neuen Gegenstandskataloges (GK) des Instituts für Medizinische und Pharmazeutische Prüfungsfragen (IMPP) dar und ist damit für die Lehre und die Staatsexamensprüfungen von größter Bedeutung. Die Lehre stellt das alle pharmakologische Universitätsinstitute verbindende Element dar und ist für die akademische Zukunft des Faches essentiell.

Im NKLM und GK wird die klassische Trennung von experimenteller und klinischer Pharmakologie aufgehoben. Stattdessen werden die auf pathophysiologischen Mechanismen basierten Prinzipien der Pharmakotherapie in den Vordergrund gestellt. Zugleich ist es ein wichtiges Ausbildungsziel von NKLM und GK, dass der Student sein Wissen praxisnah anwenden kann. Der Advanced Course richtet sich an Pharmakologiedozenten aller Erfahrungsstufen und wird am Beispiel des seit vielen Jahren mit Lehrpreisen ausgezeichneten Moduls „Pharmakologie und Toxikologie“ der Medizinischen Hochschule Hannover sowie des neuen am NKLM orientierten Lehrbuches „Basiswissen Pharmakologie“ aufzeigen, wie die Ziele des NKLM und GK erreicht werden können und somit die zentrale Querschnittsfachposition der Pharmakologie in der medizinischen Ausbildung gesichert wird.


08:30–09:30 Short talks

 König-Karl-Halle
 Chairs

Toxicology – Organ toxicology

A. Braeuning (Berlin), H. Hintzsche (Erlangen)

08:30 Mitochondrial toxicology – rescuing mitochondria in Wilson disease avoids
 1 acute liver failure
 H. Zischka (Munich)

08:45 Epithelial-fibroblast crosstalk – necessary requirement for the nephrotoxicity
 2 of ochratoxin A (OTA)?
M.-C. Schulz, M. Gekle, G. Schwerdt (Halle a. d. S.)

09:00 The use of AOP-driven analyses for determining molecular mechanisms of
 3 liver steatosis induced by triazole fungicides *in vitro*
C. Knebel, A. Lampen, P. Marx-Stoelting, A. Braeuning (Berlin)

09:15 Development of a neurotoxicity assay that is tuned to detect mitochondrial
 4 toxicants
J. Delp, M. Funke, M. Leist (Konstanz)

09:30–10:30 Short talks

 König-Karl-Halle
 Chairs

Toxicology – Food toxicology

E. Richling (Kaiserslautern), W. Wätjen (Halle a. d. S.)

09:30 Human CYP3A4-mediated toxification of the pyrrolizidine alkaloid lasiocarpine
 5 J. Ebmeyer, S. Hessel-Pras, A. These, H. Glatt, A. Braeuning
 A. Lampen (Berlin)

09:45 Monitoring urinary exposure biomarkers of dietary acrylamide intake in vegans
 6 and persons without dietary preferences
 K. Goerke, M. Ruenz (Kaiserslautern), K. Abraham, A. Lampen (Berlin)
 T. Bakuradze, G. Eisenbrand, E. Richling (Kaiserslautern)

10:00 Regulatory decision about the safety of food products in the case of chronic
 7 toxicity
 H. Hintzsche (Erlangen)

10:15 Organ toxicity mediated by the food contaminant 3-MCPD is based on oxidative
 8 stress
K. Schultrich, T. Buhrke (Berlin), C. Henderson, R. Wolf (Dundee/GB), A. Braeuning
 A. Lampen (Berlin)

**09:00–10:30 Short talks**Bertha-Benz-Saal
Chair**Pharmacology – Cardiac pharmacology and treatment I**

R. Gilsbach (Freiburg i. Br.)

- 09:00
9 Dapagliflozin ameliorates diastolic function in a non-diabetic model of heart failure
D. Cappetta, K. Urbanek, L. P. Ciuffreda, A. Cozzolino (Naples/IT)
R. Coppini (Florence/IT), L. Berrino, A. De Angelis (Naples/IT)
- 09:15
10 Regional characterisation of the NLRP3 inflammasome in the diabetic mouse heart
K. Leineweber (Essen), S. Kleeschulte (Essen, Duesseldorf), S. Stolte
D. Dobrev, A. Fender (Essen)
- 09:30
11 MicroRNA-21 in cardiac resident macrophages regulates pressure cardiac remodelling
D. P. Ramanujam, A. P. Schön, C. Beck, G. Felician, A. Dueck, S. Engelhardt (Munich)
- 09:45
12 Local sympathetic control of myocardial remodeling
K. Ziegler, J. Kerler, J. Werner, S. Engelhardt (Munich)
- 10:00
13 Cholesterol depletion predisposes to congenital heart defects due to cilia dysfunction
L. Maerz, M. Burkhalter, C. Schilpp, O. Wittekind, M. Frick, M. Philipp (Ulm)
- 10:15
14 IndivuHeart – individual risk assessment for heart diseases with patient-specific iPSC-derived engineered heart tissue
B. Ulmer, A. Shibamiya, M. Schulze, T. Schulze, E. Schulze, M. Karakas, S. Schmitt
T. Zeller, A. Hansen, T. Eschenhagen (Hamburg)

09:00–10:30 Short talksKarlsruhe
Chair**Pharmacology – Immunopharmacology**

S. Beer-Hammer (Tuebingen)

- 09:00
15 *In vitro* pharmacological characterisation of the novel TLR2 antagonist MMG-11
M. Grabowski, M. S. Murgueitio, G. Wolber, G. Weindl (Berlin)
- 09:15
16 Lysosomotropic drugs enhance pro-inflammatory responses to IL-1 β in macrophages by inhibiting internalisation of the IL-1 receptor
C. Lübow, G. Weindl (Berlin)
- 09:30
17 LPS-neutralizing peptides reduce outer membrane vesicle-induced inflammatory responses
A. Pfalzgraff (Berlin), W. Correa, L. Heinbockel, A. B. Schromm (Borstel)
C. Lübow (Berlin), N. Gisch (Borstel), G. Martinez-de-Tejada (Pamplona/ES)
K. Brandenburg (Borstel), G. Weindl (Berlin)



- 09:45
18 Hierarchical control of chromatin structure and gene activation by cytokine-responsive enhancers
M. Kracht, S.-S. Weiterer, J. Meier-Sölch, L. Jurida (Giessen)
A. Mizi (Goettingen), T. Georgomanolis (Cologne), A. Papantonis (Goettingen)
- 10:00
19 mTOR contributes to LPS-triggered neuroinflammation – modulation of I κ B- α /NF- κ B/HIF-1 α signaling pathway
D. S. Guden, M. Temiz-Resitoglu, S. P. Senol, D. Kibar, S. N. Yilmaz, B. Tunctan
S. Sahan-Firat (Mersin/TR)
- 10:15
20 The phospholipase C- γ 2 mutant S707Y associated with acquired ibrutinib resistance of chronic lymphocytic leukemia is activated via Bruton's tyrosine kinase independent of its kinase activity
M. Wist, Y. Zhou, J. Haas, S. Endres, A. Schade, P. Gierschik, C. Walliser (Ulm)
- 09:00–10:30 **Short talks**
Reutlingen **Clinical pharmacology – Disease models and drug development**
Chair M. Fromm (Erlangen)
- 09:00
21 Transcriptional effectors of etoposide contribute to cytotoxicity in AML cell lines
P. More, U. Gödtel-Armbrust, V. Shah, M. Mathäs, T. Kindler, M. Andrade
L. Wojnowski (Mainz)
- 09:15
22 Expression of clinically relevant nuclear receptors in the human intestine and liver
L. Gödtke, D. Busch, P. Erdmann, S. Brück, L.-I. Partecke, C.-D. Heidecke
S. Oswald (Greifswald)
- 09:30
23 The Glucocorticoid-Induced Leucine Zipper (GILZ) mediates statin-induced muscle damage
J. V. Valbuena Perez, J. Hoppstaedter (Saarbrücken)
W. K. F. Tse (Fukuoka/JP), S. Bruscoli, S. Flamini (Perugia/IT), A. Andreas
J. Herrmann, R. Mueller (Saarbrücken), C. Riccardi (Perugia/IT)
A. K. Kierner (Saarbrücken)
- 09:45
24 Comprehensive drug uptake transporter proteomics and metabolomic profiling of human liver
A. T. Nies (Stuttgart, Tuebingen), N. Handin (Uppsala/SE), E. Schaeffeler, M. Haag
U. Hofmann, S. Winter, C. Neul, K. Klein, U. M. Zanger (Stuttgart, Tuebingen)
P. Artursson (Uppsala/SE), M. Schwab (Stuttgart, Tuebingen)
- 10:00
25 Splenomegaly associated anaemia in global IRAG-deficient mice is attenuated by esomeprazole
M. Majer, A. Schramm, J. Schloßmann (Regensburg)



10:15 Inhibition of nucleoside diphosphate kinases as a novel therapeutic
26 approach in cardiovascular diseases
S. Lomada (Mannheim), P. Attwood (Perth/AU), A. Kannt (Frankfurt a. M.)
T. Wieland, C. Vettel (Mannheim)

10:30–10:45 Coffee break in the industrial exhibition

10:45–11:00 Opening ceremony

König-Karl-Halle

Welcome note by the conference chairs
M. Schwab (Stuttgart, Tuebingen), H. Barth (Ulm)

Welcome note by the president of the DGPT
T. Wieland (Mannheim)

11:00–11:45 Plenary lecture I

König-Karl-Halle
Chair

Toxicology
H. Barth (Ulm)

Plenary lecture
V. Auwärter (Freiburg i. Br.)

12:00–12:45 Meet the company

Bertha-Benz-Saal & (see page 76)
Karlsruhe

11:45–13:00 Special event

Reutlingen

Toxicology in Germany 2019

12:45–13:30 Get together within the industrial exhibition

Foyer

(see page 68)

13:30–14:30 Poster session I

List-Saal/Empore

(see page 38)


14:30–16:00 Symposium 1 • Paul Martini Symposium

König-Karl-Halle

Prävention und Management immunologischer Nebenwirkungen bei innovativen Therapieansätzen

Chairs S. Jahn (Neu-Isenburg), K. Bestehorn (Duesseldorf)

- 14:30 Pathomechanismen der Entstehung immunologischer Nebenwirkung bei der Anwendung von Biotherapeutika
S. Jahn (Neu-Isenburg)
- 14:50 Infektionsrisiken bei Therapie mit Biotherapeutika in der Rheumatologie
T. Harrer (Erlangen)
- 15:10 Risiko-Prävention zur Vermeidung/zum Management von immunologischen Nebenwirkungen von Biotherapeutika
J. Leemhuis (Grenzach-Wyhlen/CH)
- 15:30 Immunologische Nebenwirkungen bei neuen Krebstherapien zur Behandlung des malignen Melanoms
T. Eigentler (Tuebingen)
- 15:50 Discussion
- 16:00–16:15 Coffee break in the industrial exhibition

16:15–17:45 Symposium 2

König-Karl-Halle

Novel psychoactive substances – toxicokinetics and toxicodynamics

Chairs M. R. Meyer (Homburg), P. Dargan (London/GB)

- 16:15 Introduction into novel psychoactive substances including aspects of clinical toxicology
P. Dargan (London/GB)
- 16:40 Novel psychoactive substances – toxicokinetics and toxicodynamics 1
L. Wagmann (Homburg)
- 17:05 Novel psychoactive substances – toxicokinetics and toxicodynamics 2
H. H. Maurer (Homburg)
- 17:30 Discussion





16:15–17:45 Symposium 3

Bertha-Benz-Saal

Chairs

Novel aspects of molecular imaging

P. Gierschik (Ulm), T. Wieland (Mannheim)

16:15 Translational imaging for psychiatric drug development
A. Sartorius (Mannheim)

16:35 Chorioallantoic membrane (CAM) imaging for biodistribution assessment of new compounds
V. Rasche (Ulm)

17:00 Multimodal imaging in basic research and clinical translation
B. Pichler (Tuebingen)

17:20 Decipher the neuro-glio-vascular interaction with multi-modal fMRI
X. Yu (Tuebingen)

16:15–17:45 Symposium 4

Karlsruhe

Publication 4.0 – Wie publizieren wir in der Zukunft?



16:15 Verhandlungen und Ziele des DEAL-Konsortiums
H. Hippler (Bonn)

16:35 Publizieren im digitalen Zeitalter einer globalen Wissenschaft
C. Schulz (Goettingen)

16:55 Open Access – nicht ohne Open Science
B. Pulverer (Heidelberg)

17:15 Diskussion

16:15–17:45 Symposium 5

Reutlingen

Chairs

Guideline-based polypharmacy – challenges and solutions

M. Wehling (Mannheim), K. Bestehorn (Duesseldorf)

16:15 Incidence and consequences of guideline-based polypharmacy
M. Wehling (Mannheim)

16:40 Medication plan – problem or solution?
W. E. Haefeli (Heidelberg)

17:05 Geriatric assessment and therapeutic individualization to avoid polypharmacy
M. Gosch (Nuremberg)

17:30 Discussion



- 17:45–19:15** General meeting
König-Karl-Halle Gesellschaft für Toxikologie (GT)
- 17:45–19:15** General meeting
Bertha-Benz-Saal Deutsche Gesellschaft für Pharmakologie (DGP)
- 17:45–19:15** General meeting
Karlsruhe Deutsche Gesellschaft für Klinische Pharmakologie und Therapie (DGKliPha)
- 17:45–19:15** General meeting
Reutlingen Arbeitsgemeinschaft für Angewandte Humanpharmakologie e. V. (AGAH)
- 19:30–21:00** Social evening Forum Junge Wissenschaft – Science Slam
ATTENTION!
Other venue Café Félix (see page 68)

**08:30–09:30 Short talks**König-Karl-Halle
Chairs**Toxicology – Biotransformation and toxicokinetics**

A. Mangerich (Konstanz), N. Schupp (Duesseldorf)

08:30
27 Carbon monoxide releasing molecule 401 (CORM-401) modulates phase I metabolism of the tricyclic antidepressant amitriptyline
M. Walter, P. Brenneisen, W. Stahl, D. Stucki (Duesseldorf)

08:45
28 Grouping of 14 structural different pyrrolizidine alkaloids due to their hepatotoxic properties
J. Glücker, J. Waizenegger, C. Luckert, A. Braeuning, A. Lampen, S. Hessel-Pras (Berlin)

09:00
29 Pesticides induce the ABCG2 efflux activity in the bovine mammary gland
L. Kuhnert (Leipzig), M. Giantin, M. Dacasto (Padova/IT), S. Halwachs
W. Honscha (Leipzig)

09:15
30 Mevalonate depletion leads to an increased lifespan in *C. elegans*
A. Jahn, G. Fritz, S. Honnen (Duesseldorf)

09:30–10:30 Short talksKönig-Karl-Halle
Chairs**Toxicology – Genotoxicity**

A. Cartus (Kaiserslautern), C. Henninger (Duesseldorf)

09:30
31 Survivin inhibitor LLP3 sensitizes colorectal cancer cells to irinotecan in the context of a specific XAF1/p53 signature
M. Tomcic, C. Steigerwald, B. Rasenberger, M. Christmann (Mainz)

09:45
32 The natural compound methyleugenol activates the ATR-CHK1-p53 mediated DNA damage response and triggers caspase-dependent cell death
D. Heylmann, A. S. Vollmer (Giessen), D. Begaliew, S. Peter, T. Nikolova
M. Christmann (Mainz), J. A. Fuhlbrueck, S. Stegmüller, A. T. Cartus (Kaiserslautern)
J. Fahrer (Giessen, Mainz)

10:00
33 Dietary heme alters intestinal microbiota and induces chronic intestinal inflammation with colorectal tumor formation
N. Seiwert (Giessen, Mainz), S. Stroh, H. Zillmer (Mainz), J. Döhring (Hannover)
P. Steinberg (Hannover, Karlsruhe), P. Adams, N. Hövelmeyer (Mainz)
S. Wirtz (Erlangen), B. Kaina, S. Förtsch (Mainz), J. Fahrer (Giessen, Mainz)

10:15
34 PARP1 regulates genotoxic stress-induced nucleolar-nucleoplasmic shuttling of the genome maintenance factors WRN and XRCC1 in a protein and toxicant-specific manner
S. Veith, A. Schink, M. Engrecht, M. Mack, L. Rank, P. Rossatti, M. Hakobyan
T. Hefele, M. Frensch, D. Goly, A. Fischbach, A. Bürkle, A. Mangerich (Konstanz)


09:00–10:30 Short talks

 Bertha-Benz-Saal
 Chair

Pharmacology – Cardiac pharmacology and treatment II

F. Cuello (Hamburg)

- 09:00
35 CRISPR interference reveals functional genomic interactions in cardiac myocytes
M. Schwaderer, S. Nothjunge, L. Hein, R. Gilsbach (Freiburg i. Br.)
- 09:15
36 Chromatin interactions in mouse cardiomyocytes during postnatal development and in cardiac hypertrophy
S. Nothjunge, J. Wolff, T. Kehl, B. Grüning, L. Hein, R. Gilsbach (Freiburg i. Br.)
- 09:30
37 Transcriptional mechanisms of atrial remodeling and arrhythmia in cardiac myocytes
C. Rommel, M. Barg, M. Schwaderer (Freiburg i. Br.)
U. Ravens (Freiburg i. Br., Dresden), L. Hein (Freiburg i. Br.)
- 09:45
38 Antiarrhythmic CNP effects are mediated by phosphodiesterase 2
S. Kämmerer, M. Fahmi, J. Siegert, K. Richter, F. Dutt, S. Künzel, M. Wagner
A. El-Armouche (Dresden)
- 10:00
39 Alterations in pulmonary vasculature and lung inflammation in a model of heart failure with preserved ejection fraction – effects of ranolazine
A. De Angelis, L. P. Ciuffreda, D. Cappetta, A. Liparulo, T. P. Russo, A. Miccichè
B. D’Agostino, L. Berrino, K. Urbanek (Naples/IT)
- 10:15
40 Inhibition of cardiac lymphangiogenesis in imatinib-induced cardiomyopathy
K. Urbanek (Naples/IT), D. Madeddu, S. Cavalli, C. Frati, A. Falco
B. Lorusso (Parma/IT), D. Cappetta, L. Berrino, A. De Angelis (Naples/IT)
F. Quaini (Parma/IT)

09:00–10:30 Short talks

 Karlsruhe
 Chair

Pharmacology – G-protein coupled receptors

B. Möpps (Ulm)

- 09:00
41 Voltage dependence of prostanoid receptors
M. Kurz, A.-L. Krett, M. Bünemann (Marburg)
- 09:15
42 Agonist induced association and dissociation of mACh-receptor G-protein complexes measured by FRET-techniques in intact cells and receptor membranes
H. Lemoine (Duesseldorf), O. Ilyaskina, M. Bünemann (Marburg)
- 09:30
43 Dynamic insights into class A GPCR activation dynamics – a novel way to develop subtype selective agonists?
M. Kauk (Jena), M. Bermudez (Berlin), D. Volpato (Wuerzburg), D. Schaller (Berlin)
N. Yurdagül-Hemrich, U. Zabel, U. Holzgrave (Wuerzburg), G. Wolber (Berlin)
C. Hoffmann (Jena, Wuerzburg)



- 09:45
44 Allosteric coupling is linked to GPCR ligand bias
M. Bermudez, A. Bock (Berlin)
- 10:00
45 Crystal structure of the parathyroid hormone 1 receptor in complex with a peptide agonist
J. Ehrenmann, J. Schöppe, C. Klenk (Zurich/CH), M. Rappas
A. S. Doré (Cambridge/GB), L. Kummer, A. Plückthun (Zurich/CH)
- 10:15
46 HA-epitope tag knockin mice demonstrate lack of μ -opioid receptor splice variants in mouse brain
S. Fritzwanker, A. Kliewer, S. Schulz (Jena)
- 09:00–10:30 **Short talks**
Reutlingen **Clinical pharmacology – Clinical pharmacology and drug therapy**
Chair H. Brauch (Stuttgart)
- 09:00
47 Piperacillin plasma concentrations are subtherapeutic in burn patients following a standard dosage regimen
K. Olbrisch, T. Kisch, J. Thern, E. Kramme, J. Rupp, T. Graf (Luebeck)
S. Wicha (Hamburg), P. Mailänder, W. Raasch (Luebeck)
- 09:15
48 Outcomes following guided de-escalation of antiplatelet treatment in acute coronary syndrome patients with and without diabetes mellitus undergoing percutaneous coronary intervention – a prespecified analysis from the randomized TROPICAL-ACS trial
D. Trenk (Bad Krozingen), R. Hein, L. Gross (Munich), D. Aradi (Balatonfüred/HU)
C. Jacobshagen (Goettingen), T. Geisler (Tuebingen), M. Hadamitzky (Munich)
K. Huber (Vienna/AT), F. T. Nagy (Szeged/HU), C. A. Dézsi (Győr/HU), Z. Huczek
L. Koltowski (Warsaw/PL), H. Mudra (Munich), H. Ince (Berlin), M. Baylacher
S. Deuschl, S. Massberg, D. Sibbing (Munich)
- 09:30
49 Increased sphingosine-1-phosphate serum concentrations in subjects with periodontal disease – a matter of inflammation
E. Moritz, G. Jedlitschky, J. Negnal, M. V. Tzvetkov, T. Kocher, B. Holtfreter
B. H. Rauch (Greifswald)
- 09:45
50 Medication safety in patients treated with new oral antitumor agents: a prospective, randomized investigation on the impact of intensified clinical pharmaceutical/clinical pharmacological care on patient safety and well-being (AMBORA-Study – supported by the German Cancer Aid (70112447))
P. Dürr, K. Schlichtig, F. Dörje, M. F. Fromm (Erlangen)



- 10:00
51 Gender-specific alterations of bile acid homeostasis in Non-alcoholic Fatty Liver Disease (NAFLD)
M. Haag (Stuttgart, Tuebingen), J. Tevini, A. Feldman, S. K. Eder
T. K. Felder (Salzburg/AT), C. Datz (Salzburg, Oberndorf/AT)
E.-K. Mustonen (Stuttgart, Tuebingen), T. Schiergens (Munich), K. Klein
S. Winter, U. M. Zanger, O. Burk, M. Schwab (Stuttgart, Tuebingen)
E. Aigner (Salzburg/AT)
- 10:15
52 Cardiovascular drugs – adherence monitoring in oral fluid by means of hyphenated high-resolution mass spectrometry
L. H. J. Richter, C. M. Jacobs, F. Mahfoud, I. Kindermann, M. Böhm
M. M. Meyer (Homburg)
- 10:30–11:00 Coffee break and industrial exhibition
- 11:00–11:45 **Plenary lecture II**
König-Karl-Halle **Clinical pharmacology**
Chair I. Cascorbi (Kiel)
- Liquid biopsy – a new diagnostic concept in oncology
K. Pantel (Hamburg)
- 12:00–13:00 **Industrial symposium**
Bertha-Benz-Foyer (see page 76)
- 13:00–14:00 **Poster session II**
List-Saal/Empore (see page 52)
- 14:00–15:00 **Short talks**
König-Karl-Halle **Toxicology – Toxins I**
Chairs R. Gerhard (Hannover), K. Ernst (Ulm)
- 14:00
53 Biohybrid transporters for cell-type selective delivery and controlled release of therapeutic peptides
M. Fellermann, S. Carle, F. Weiß, J. Michaelis, H. Barth (Ulm)
- 14:15
54 Chronic senescence in mesenchymal stem cells as possible mechanism in wound healing disorder after sulfur mustard exposure
S. Rothmiller (Munich, Konstanz), A. Bürkle (Konstanz), D. Steinritz
H. Thiermann, A. Schmidt (Munich)
- 14:30
55 Inhibition of *Clostridium difficile* toxins TcdA and TcdB by human serum albumin
S. Fischer, P. Papatheodorou (Ulm), A. di Masi (Rome/IT), M. Hägele, M. Müller
A. Kleger, H. Barth (Ulm)



- 14:45
56 Recombinant claudin molecules as innovative capture structures for clostridium perfringens enterotoxin
J. Weisemann, S. Mahrhold (Hannover), M. Krüger, T. Neumann
B. G. Dorner (Berlin), A. Rummel (Hannover)
- 14:00–15:00 **Short talks**
Bertha-Benz-Saal **Pharmacology – Ion channels**
Chair A. Dietrich (Munich)
- 14:00
57 Novel modulator of TRPC6 function in platelets
T. Bentrchia, V. Flockerzi (Homburg)
- 14:15
58 The contribution of individual ORAI proteins to agonist- and store dependent Ca²⁺ entry, activation of connective tissue mast cells and anaphylaxis
V. Tsvilovsky, K. Oehlenschlaeger, C. Stengl, A. Solis-Lopez, D. Schumacher
U. Kriebs (Heidelberg), A. Roers (Dresden), M. Trebak (Hershey, PA/US)
P. Worley (Baltimore, MD/US), M. Freichel (Heidelberg)
- 14:30
59 Role of calcium channel subunits in bone
A. Belkacemi, A. Raza, K.-M. Busch, V. Flockerzi (Homburg)
- 14:45
60 Reduced neuropathic pain behavior in mice lacking the cyclic nucleotide-gated channel subunit CNGB1
W. Kallenborn-Gerhardt, R. Lu, J. Jonas Petersen, K. Metzner, M. S. Kuth
S. Heine (Frankfurt a. M.), O. Drees (Witten), M. Paul (Frankfurt a. M.)
E. Becirovic (Munich), L. Kennel, C. Flauaus, T. Groß, G. Wack, S. W. Hohmann
D. Del Turco (Frankfurt a. M.), M. Biel (Munich), G. Geisslinger (Frankfurt a. M.)
S. Michalakakis (Munich), A. Schmidtko (Frankfurt a. M.)
- 14:00–15:00 **Short talks**
Karlsruhe **Pharmacology – Membrane transporters**
Chair S. Oswald (Greifswald)
- 14:00
61 Identification and functional characterization of novel genetic variants of the human multidrug resistance protein 2 (MRP2/ABCC2)
C. Kölz, E. Schaeffeler, R. Tremmel, S. Winter, K. Klein, U. M. Zanger
M. Schwab, A. T. Nies (Stuttgart, Tuebingen)
- 14:15
62 Frequently used veterinary drug combinations alter the bovine ABCG2 efflux activity
M. Wegrad, L. Kuhnert, W. Honscha (Leipzig)
- 14:30
63 Sorafenib therapy for treatment of liver cancer is independent from organic cation transporter 1 (OCT1/SLC22A1)
M. Chen (Columbus, OH/US), C. Neul, E. Schaeffeler, F. Frisch, S. Winter
M. Schwab (Stuttgart, Tuebingen), H. Koepsell (Wuerzburg)
S. Hu (Columbus, OH/US), S. Laufer (Tuebingen), S. D. Baker
A. Sparreboom (Columbus, OH/US), A. T. Nies (Stuttgart)



14:45 OCT1 of mice and men – species-specific differences in the function of OCT1
 64 M. J. Meyer (Greifswald, Goettingen), M. Bolesta, R. Krätzner, T. Seitz
 J. Brockmöller (Goettingen), M. V. Tzvetkov (Greifswald)

14:00–15:00 **Symposium 6**

Reutlingen **IMI-initiatives meet pharmacology**
 Chair M. Schwab (Stuttgart, Tuebingen)

14:00 ITCC-P4 IMI initiative
 S. Pfister (Heidelberg)

14:15 DIAMOND IMI initiative
 R. Roubenoff (Basel/CH)

14:30 c4c IMI initiative
 M. Turner (Liverpool/GB)

14:45 Discussion

15:00–15:30 Coffee break in the industrial exhibition

15:30–17:00 **Symposium 7**

König-Karl-Halle **Novel approaches for detection and neutralization of biological toxins**
Joint-Symposium GT – Robert-Koch-Institut Berlin

Chairs H. Barth (Ulm), B. Dorner (Berlin)

15:30 The antibiotic agent bacitracin as potent novel inhibitor for various clinically
 relevant bacterial toxins
 H. Barth (Ulm)

15:50 Preliminary working title – a novel pharmacological inhibitor of bacterial
 protein toxins
 D. Gillet (Gif sur Yvette Cedex/FR)

16:10 **IT1** Harnessing high-affinity receptor interactions for bi-functional detection of
 botulinum neurotoxins
 D. Stern (Berlin)

16:30 **IT2** Exploring receptor binding and tailor-made high affinity mAbs for detection
 of enterotoxins
 M. Krüger (Berlin)

16:50 Discussion



15:30–17:00 Symposium 8

Bertha-Benz-Saal

Ion channels as new drug targets

Chairs

R. Caballero (Madrid/ES), A. Ferrer-Montiel (Elche/ES)
K. Groschner (Graz/AT)

15:30 New paradigms in the modulation of cardiac ion channels
R. Caballero (Madrid/ES)

15:50 The molecular structure of the canonical TRPC4 channel
S. Raunser (Dortmund)

16:10 Lipid regulation of TRPC channels
K. Groschner (Graz/AT)

16:30 Soft drugs as a novel pharmacological paradigm for TRP channels
A. Ferrer-Montiel (Elche/ES)

16:50 Discussion

15:30–17:00 Symposium 9

Karlsruhe

Organ on a chip

Chair

S. Honnen (Düsseldorf), E. Bankoglu (Würzburg)

15:30 From Organ-on-a-chip tools towards “patients” on chips – enforcing a
paradigm shift in drug development
U. Marx (Berlin)

16:00 Microphysiological models – emerging platforms for disease modelling and
drug testing *in vitro*
A. Mosig (Jena)

16:30 Parallelisierbare Organ-on-a-Chip als mikrophysiologische Modelle von
komplexen humanen 3D-Geweben
P. Loskill (Stuttgart)

Discussions directly after the talks

**15:30–17:00 Symposium 10**

Reutlingen

State of the art of cardiovascular diseases

Chairs

K. Bestehorn (Duesseldorf), B. Rauch (Greifswald)

15:30

Anticoagulation

B. Rauch (Greifswald)

15:50

Diabetes mellitus

J. Seufert (Freiburg i. Br.)

16:10

State of the art of lipid therapy in coronary heart disease

O. Weingärtner (Jena)

16:30

Heart failure

S. Störk (Wuerzburg)

16:50

Discussion

17:00–17:15

Coffee break in the industrial exhibition

17:15–18:45**Symposium 11**

König-Karl-Halle

Computational toxicology

Chairs

L. T. Anger (Frankfurt a. M.), M. Frericks (Ludwigshafen a. R.)

17:15

Introduction to computational/in silico toxicology

IT3

L. T. Anger (Frankfurt a. M.)

17:28

Application of QSAR for genotoxicity prediction of plant protection residues and impurities

IT4

M. Frericks (Ludwigshafen a. R.)

17:41

Read-across under REACH

IT5

J. vom Brocke (Helsinki/FI)

17:55

From paper archive to knowledge management – how european data sharing initiatives (eTOX, eTransafe) are changing the view on preclinical safety data

T. Steger-Hartmann (Berlin)

18:20

In silico prediction of xenobiotic metabolism

J. Kirchmair (Hamburg; Bergen/NO)



17:15–18:45 Symposium 12 • Joint-Symposium DGPT – SSPT

Bertha-Benz-Saal

Swiss Society of Pharmacology and Toxicology

Novel drug targets in the immune system

Chairs J. Pfeilschifter (Frankfurt a. M.), H.-U. Simon (Bern/CH)

17:15 Sphingolipid signaling in inflammatory diseases
J. Pfeilschifter (Frankfurt a. M.)

17:35 The IL-1 receptor family
M. Kracht (Gießen)

17:55 Molecular mechanism of NET formation
H.-U. Simon (Bern/CH)

18:15 Immune mechanisms in cancer
C. Bourquin (Geneva/CH)

18:35 Discussion

17:15–18:45 Symposium 13 • IUPHAR symposium

Reutlingen

Chairs I. Cascorbi (Kiel), A. K. Daly (Newcastle/GB)

17:15 Drug-induced liver injury
A. K. Daly (Newcastle/GB)

17:40 Pharmacogenomics in cancer
C. Rodríguez-Antona (Madrid/ES)

18:05 Predictability of genotype-phenotype relationship
R. Böhm (Kiel)

18:30 Discussion

18:45–19:15 Award ceremony

König-Karl-Halle

19:45–23:30 Social evening at the “Restaurant Plenum”
(see page 68)



The workshop addresses young scientists working in basic pharmacological research and other colleagues involved in biomedical research who would like to know more about early phase clinical development.

Biomarkers and pharmacodynamic models will be the focus of this workshop. Translation from knowledge derived from non-clinical studies to planning and conduct of early clinical trials aims at mitigating risk as well as at increasing the predictability for a safe and successful development. Biomarkers fit for purpose and meaningful pharmacodynamic models are most important tools in this context.

Learn from experts in early medicines development how to assess safety and tolerability, how to investigate mechanisms of action and how to demonstrate proof of concept for promising new compounds in healthy subjects and patients.

Breaks present a good opportunity for networking with faculty and colleagues. The number of participants is limited to 50 persons.

09:00–10:45 Morning session

Heilbronn

Chairs G. Wensing (Wuppertal), B. Schug (Oberursel)

09:00 Welcome
G. Wensing (Wuppertal)

09:05 Pharmacodynamic endpoints and inclusion of biomarkers in early clinical trials
J. Rengelshausen (Aachen), M. Zühlsdorf (Darmstadt)

12:15–17:00 Afternoon session

Heilbronn

Introduction to biomarkers and pharmacodynamic models and their use in drug development

Chairs J. Rengelshausen (Aachen), K. Breithaupt-Grögler (Frankfurt a. M.)

12:15 Biomarkers for cardiovascular pharmacodynamic effects – may ‘digital’ biomarkers provide more realistic data than bedside assessments?
F. Kramer (Wuppertal)



- 13:00 Challenges in using biomarkers for developing anticoagulants
D. Kubitza (Wuppertal)
- 13:45 Break for plenary lecture GPTS
- 14:00 Safety markers in early phase trials (drug induced renal and liver injury,
assessment of neurological adverse reactions)
F. Donath (Erfurt)
Introduction to topic: F. Donath (Erfurt)
Specific safety markers: *Speakers to be determined*
- 15:15 How to evaluate drug effects on the QT(c) interval in healthy subjects and
patients
J. Rengelshausen (Aachen)
- 16:00 Break
- 16:15 Stratified medicine – development of companion diagnostics
M. Zühlsdorf (Darmstadt)
- 16:45 Wrap-up and conclusion
J. Rengelshausen (Aachen), K. Breithaupt-Grögler (Frankfurt a. M.)



08:30–09:30 Short talks

König-Karl-Halle
Chairs**Toxicology – Toxic compounds**

S. Honnen (Duesseldorf), V. Lange (Dortmund)

08:30 Human skin sensitization potential and potency of terpene hydroperoxides
65 in an epidermal skin environmentM. Silva e Sousa, J. Lichter, M. T. Schellenberger, B. Blömeke (Trier)08:45 Increased concentration of angiotensin II causes DNA damage, an increased
66 mutation frequency and an initiation of epithelial to mesenchymal transition in rat kidneyC. Hartmann (Duesseldorf), B. Epe (Mainz), N. Schupp (Duesseldorf)09:00 Long-term effects of inhaled nanoparticles in rats – ceriumdioxide and
67 bariumsulphateL. Ma-Hock, K. Wiench, S. Groeters, B. van Ravenzwaay
R. Landsiedel (Ludwigshafen a. R.), H. Ernst, D. Schaudien (Hannover)09:15 Are additives from plastic a notable source for dermal exposure?
68C. Hutzler, N. Bartsch, B. Vieth, A. Luch (Berlin)

09:30–10:30 Short talks

König-Karl-Halle
Chairs**Toxicology – Toxins II**

R. Gerhard (Hannover), K. Ernst (Ulm)

09:30 Escherichia coli subtilase cytotoxin – binding, uptake and effects on cultured cells
69K. Sessler, A. Schroll, S. Noettger (Ulm), M. Krause, H. Schmidt (Hohenheim)
P. Papatheodorou, H. Barth (Ulm)09:45 The enzymatically active domain of diphtheria toxin (DT) is transported by
70 non-toxic DT mutants in a binary toxin like fashionS. Carle, M. Fellermann, H. Barth (Ulm)10:00 Photorhabdus luminescens Tc toxin is inhibited by the protease inhibitor MG132
71 and activated by protease cleavage resulting in increased binding to target cellsP. Ng'ang'a, S. Ost, A. E. Lang, K. Aktories (Freiburg i. Br.)10:15 Production, isolation and interaction of botulinum neurotoxin E and
72 associated proteins from *C. botulinum* strain BelugaA. Przykopanski (Hannover), M. Krüger (Berlin), R. Jin (Irvine, CA/US)
B. G. Dorner (Berlin), A. Rummel (Hannover)

**09:00–10:30 Short talks**

Bertha-Benz-Saal **Pharmacology – Cancer pharmacology and treatment**
Chair T. Worzfeld (Marburg)

09:00 Organotypic head and neck cancer models for drug testing
73 L. Gronbach, C. Wolff, K. Klinghammer, C. Zoschke, U. Keilholz
M. Schäfer-Korting (Berlin)

09:15 Targeting endolysosomal calcium channels as novel strategy to treat cancer
74 M. Müller, Y.-K. Chao, S. Gerndt, J. Schürmann, R. Schütz, C. Atzberger
P. Nguyen, M. Biel, F. Bracher, M. Keller, A. M. Vollmar, C. Grimm
K. Bartel (Munich)

09:30 Two-pore channels shut down – targeting TPC2 inhibits proliferation of cancer
75 cells *in vitro* and inhibits tumor growth *in vivo*
M. Müller, Y.-K. Chao, S. Gerndt, P. Nguyen, M. Biel, F. Bracher, A. M. Vollmar
M. Keller, C. Grimm, K. Bartel (Munich)

09:45 The mitochondrial disruptor CPI-613 synergizes with standard chemotherapeutics
76 in the treatment of colorectal cancer *in vitro* and *in vivo*
C. Neitzel (Giessen, Mainz), S. Stroh, G. Nagel (Mainz), A. Moritz (Giessen)
M. Linnebacher (Rostock), J. Fahrner (Giessen, Mainz)

10:00 The role of the inducible dual-specificity phosphatases 2 in regulation of oncogene
77 signaling in diffuse large B cell lymphoma
H. Bruckmüller (Kiel, Tromsø/NO), B. Johansen (Tromsø/NO), I. Nagel (Kiel)
J. Hollmann (Tromsø/NO), J. Wise, H. Holte, J. H. Myklebust (Oslo/NO)
I. Cascorbi (Kiel), O. M. Seternes (Tromsø/NO)

10:15 Identification of the negative gating modulator of the transient receptor potential
78 cation channel TRPM7 NS8593 as a novel inhibitor of MRTF/SRF-dependent gene
expression and hepatocarcinogenesis
S. Voringner, S. Zierler, V. Chubanov, T. Gudermann (Munich), S. Muehlich (Erlangen)

09:00–10:30 Short talks

Karlsruhe **Pharmacology – GTP-binding proteins**
Chair S. Lutz (Goettingen)

09:00 Comparison of β 1-Adrenoceptor (AR) signalling in intact cells and
79 receptor membranes using FRET-based assays
T. Pfeifer, H. Lemoine (Duesseldorf)

09:15 RKIP translates β -adrenergic receptor signaling into mitochondrial protection
80 T. Brand (Dortmund), N. Gedik, G. Heusch, P. Kleinbongard (Essen)
R. Horvath (Newcastle upon Tyne/GB), K. Lorenz (Wuerzburg, Essen, Dortmund)



- 09:30
81 Inactivation of Gai3-proteins protects from post-ischemic cardiac infarct progression in a cell-type specific manner in mice
S. Killinger, L. Beichert, D. Köhler, C. Eggstein, S. Schwegmann, P. Rosenberger B. Nürnberg, S. Beer-Hammer (Tuebingen)
- 09:45
82 Lack of Gai2 in adipocytes protects from diet-induced obesity
V. Leiss, A. Schönsiegel (Tuebingen), T. Gnad, S. Scheibler (Bonn), T. Sartorius J. Machann (Tuebingen), A. Sassmann, S. Offermanns (Bad Nauheim) H.-U. Häring (Tuebingen), A. Pfeifer (Bonn), B. Nürnberg (Tuebingen)
- 10:00
83 Endothelin-1 signals via Gq-dependent and Gq-independent pathways in brown adipocytes
J. Garg, J. H. Yang, L. Prünte, A. Pfeifer (Bonn)
- 10:15
84 Impairment of cerebrovascular reactivity to CO₂ alters behavioral and respiratory responses in mice
J. Wenzel (Luebeck), C. Bettoni (Zurich/CH), J. C. Assmann (Luebeck) M. Wegmann (Borstel), G. M. König, E. Kostenis (Bonn) S. Offermanns (Bad Nauheim, Bonn), C. A. Wagner (Zurich/CH) M. Schwaninger (Luebeck)
- 09:00–10:30 **Short talks**
Reutlingen
Chair
Clinical pharmacology – Pharmacogenomics and personalized medicine
M. V. Tzvetkov (Greifswald)
- 09:00
85 The use of Yohimbine for phenotyping of CYP2D6 activity
M. Vay, P. Rose (Heidelberg), M. Meyer (Greifswald), G. Mikus (Heidelberg)
- 09:15
86 Profiling of ototoxicity risk in platinum-treated children
E. Abdel-Kahaar, L. Maier, O. Zolk (Ulm), A. am Zehnhoff-Dinnesen, R. Parfitt P. Matulat, D. Deuster, A. Tillmanns (Muenster), S. Elsner E.-M. Wolschon (Luebeck), C. Kuehni, R. Kuonen, A. Weiss (Bern/CH) M.-L. Garré (Genova/IT) T. Kepak, K. Kepakova (Brno/CZ), J. Kruseova A. Luks (Prague/CZ), J. Falck Winther, L. Kenborg (Copenhagen/DK) H. Lackner (Graz/AT), S. Bielack (Stuttgart) M. van den Heuvel-Eibrink (Utrecht/NL), G. Calaminus, K. Baust (Bonn) J. Beck (Erlangen), L. Kremer (Amsterdam/NL) E. Clemens (Utrecht, Rotterdam/NL) T. Langer (Luebeck; Utrecht, Rotterdam/NL)
- 09:30
87 Therapeutic drug monitoring after liver transplantation in times of precision medicine
J. Brockmöller, J. Matthaei, C. Dücker (Goettingen), M. Koch (Hamburg) M. Stockmann (Berlin), M.-L. Bräuer, F. Streit, M. Oellerich (Goettingen)



- 09:45
88 Variants in nudix hydrolase 15 (NUDT15) and their importance for thiopurine-related haematotoxicity in an European cohort
E. Schaeffeler, S. Jaeger, V. Klumpp (Stuttgart), J. Yang (Memphis, TN/US)
S. Igel (Stuttgart), L. Hinze, M. Stanulla (Hannover), M. Schwab (Stuttgart, Tuebingen)
- 10:00
89 Kisch.ch – a pharmacokinetic drug interaction table containing Cytochrome P450, Uridine 5'-diphospho-glucuronosyltransferase enzymes, P-glycoprotein, breast cancer resistant protein, organic anion transporters, organic cation transporter and organic-anion-transporting polypeptides 1B, among other
A. Sigaroudj, H. Vollbrecht (Essen)
- 10:15
90 Androgen receptor gene expression predicts endocrine treatment outcome in early-stage luminal breast cancer
W. Schroth, R. Hoppe, F. Büttner, S. Winter, S. Kandabarau (Stuttgart)
H. A. Brauer (Seattle, WA/US), P. Fritz (Stuttgart), M. Schwab (Stuttgart, Tuebingen)
T. E. Mürdter (Stuttgart), H. Brauch (Stuttgart, Heidelberg)
- 10:15–10:30 Coffee break in the industrial exhibition
- 10:45–11:30 **Plenary lecture III – Pharmacology**
König-Karl-Halle
Chairs P. Gierschik (Ulm), T. Wieland (Mannheim)
- 10:45 G proteins and GPCPRs transforming potential
S. Gutkind (La Jolla, CA/US)
- 11:30–11:45 Coffee break in the industrial exhibition
- 11:45–13:15 **Symposium 14**
König-Karl-Halle
Chairs **Rauchen 2.0 – neue Tabak- und Tabakersatzprodukte** 
M. Esselen (Muenster), A. Cartus (Kaiserslautern)
- 11:45 Toxikologie und Suchtaspekte von Nikotin
B.-M. Mayer (Graz/AT)
- 12:10 Harm reduction bei Tabakerhitzern (tabacco heating systems, THS)
A. Nussbaum (Graefelfing)
- 12:35 Risikobewertung und Regulation von E-Zigaretten und Tabakerhitzern
F. Henkler (Berlin)
- 13:00 Diskussion


11:45–13:15 Symposium 15

Bertha-Benz-Saal

Non-canonical GPCR signaling

Chairs

B. Nürnberg (Tuebingen), M. Freissmuth (Vienna/AT)

- 11:45 GPCR-independent activation of G proteins by DAPLE controls neural tube morphogenesis
M. Garcia-Marcos (Boston, MA/US)
- 12:10 Non canonical GPCR signaling – when evidence challenges paradigms as soon as they are well established
E. Kostenis (Bonn)
- 12:35 Receptor activity modifying proteins and relations; non-canonical modulators of GPCR signalling
D. R. Poyner (Birmingham/GB)
- 13:00 Activation of b-catenin-dependent gene transcription by Gs-coupled receptors
S. Jansen (Mannheim)

11:45–13:15 Symposium 16

Karlsruhe

Scientific and regulatory aspects of ethnicity and their consequences for clinical drug development

Chairs

B. Schug (Oberursel), G. Wensing (Wuppertal)

- 11:45 Lecture
A. Gross (Ermington/AU)
- 12:30 Discussion
A. Gross (Ermington/AU), I. Cascorbi (Kiel), A. Kovar (Frankfurt a. M.)
H. Blode (Berlin)

11:45–13:15 Symposium 17

Reutlingen

Pharmakologie-historisches Forum

Chairs

A. Philippou (Innsbruck/AT), H. Greim (Munich)

- 11:45 Einleitung
IT6 H. Greim (Munich)
- 11:55 Die Geschichte des Dr. Margarete Fischer-Bosch-Instituts
IT7 U. Klotz (Stuttgart)
- Diskussion





12:15 Emil Starkenstein – Leben und Wirken
IT8 H. Greim (Munich)

Diskussion

12:55 Schlussworte
A. Philippou (Innsbruck/AT)

13:15–13:30 Coffee break in the industrial exhibition

13:30–15:00 Symposium 18
König-Karl-Halle **Kinases as therapeutic targets in the cardiovascular system**
Chairs F. Cuello (Hamburg), K. Lorenz (Dortmund)

13:30 Manipulating titin's kinase activity
M. Gautel (London/GB)

13:50 Rho-dependent kinases in the heart – friend or foe?
S. Lutz (Goettingen)

14:10 Targeting histidine phosphorylation by nucleoside diphosphate kinases
T. Wieland (Mannheim)

14:30 Kinase-coupled TRP channels as therapeutic targets
T. Gudermann (Munich)

14:50 Discussion

13:30–15:00 Symposium 19 • Symposium Arbeitskreis Neuropharmakologie und -toxikologie
Bertha-Benz-Saal **Novel aspects of Alzheimer's dementia**
Chairs M. Schwaninger (Luebeck), J. Klein (Frankfurt a. M.)

13:30 Beyond amyloid – widening the view on Alzheimer's disease
C. Behl (Mainz)

13:50 Nutritional interventions in Alzheimer's disease – LipiDiDiet
T. Hartmann (Saarbrücken)

14:10 Neuroinflammation in Alzheimer's disease
M. T. Heneka (Bonn)

14:30 Non-coding RNAs in neurodegenerative disease
H. Soreq (Jerusalem/IL)

14:50 Discussion

**13:30–15:00 Symposium 20**

Reutlingen

Precision medicine and drug development

Chair

M. Schwab (Stuttgart, Tuebingen)

13:30

Novel aspects in personalized treatment of lymphoma

G. Ott (Stuttgart)

13:55

Novel aspects in personalized treatment of renal cancer

J. Bedke (Tuebingen)

14:20

Novel aspects in personalized treatment of brain tumors

G. Tabatabai (Tuebingen)

14:40

Discussion

15:00–15:30 Poster award ceremony and closing

König-Karl-Halle

**Poster session I • Tuesday, 26 February**

Pharmacology – GPCR I	P1–P22
Pharmacology – Cyclic nucleotides	P23–P34 • LP1
Pharmacology – Ion channels	P35–P44
Pharmacology – Drug transport and metabolism	P45–P56 • LP2
Toxicology – Toxins	P174–P182
Toxicology – Nanomaterials	P183–P192
Toxicology – Biomonitoring and biomarkers	P193–P201
Toxicology – Toxicological methods and <i>in vitro</i> toxicology	P202–P229
General – Education	P230–P233

Poster session II • Wednesday, 27 February

Pharmacology – Cardiovascular pharmacology I	P57–P68
Pharmacology – Cardiovascular pharmacology II	P69–P79
Pharmacology – Cardiovascular pharmacology III	P80–P90
Pharmacology – Immune pharmacology and inflammation	P91–P99
Pharmacology – Cancer pharmacology and treatment	P100–P110
Pharmacology – Disease models, drug development and delivery system	P111–P117
Clinical pharmacology – Pharmacokinetics and pharmacodynamics	P118–P123
Clinical pharmacology – Pharmacogenomics and personalized medicine	P124–P130
Clinical pharmacology – Clinical pharmacology and drug therapy	P131–P137
Toxicology – Genotoxicity and carcinogenesis	P138–P147
Toxicology – Organ toxicology	P148–P166
Toxicology – Food toxicology	P167–P173

**Pharmacology – GPCR I**

- Chairs M. Bünemann (Marburg), D. Meyer zu Heringdorf (Frankfurt a. M.)
- P1** Enhanced opioid analgesia and loss of tolerance but exacerbation of side effects in mice expressing phosphorylation-deficient, G protein-biased μ -receptors
A. Kliewer, Stefan Schulz (Jena)
- P2** Mini G protein recruitment as an approach to the functional characterization of histamine receptor ligands
C. Höring, L. Grätz, T. Littmann, A. Buschauer †, G. Bernhardt
A. Strasser (Regensburg)
- P3** A BRET-based assay to determine the binding of ligands to GPCRs using pyrylium-labeled fluorescent tracers
L. Grätz, T. Littmann, E. Bartole, S. Biselli, A. Pegoli, M. Keller, A. Buschauer †
G. Bernhardt (Regensburg)
- P4** Identification of structural determinants that control CCR2 receptor internalization
B. Möpps, A. Kleinsteuber, S. Beier (Ulm)
- P5** Real-time allosteric modulation at adenosine A1 receptor
N. Rüttiger (Jena), N. Ziegler, U. Zabel (Wuerzburg), C. Hoffmann (Jena)
- P6** Dynamic mass redistribution analysis of histamine H4 receptor ligands in HEK293T cells
U. Seibel, A. Buschauer †, G. Bernhardt, A. Strasser (Regensburg)
- P7** Investigation of GPCR- β -arrestin interactions using a split-luciferase complementation assay – application to the D2long and D3 receptor
L. Forster, A. Buschauer †, G. Bernhardt (Regensburg)
- P8** Structural analysis of determinants for high-affinity binding of G proteins to muscarinic receptors
V. Jelinek, M. Bünemann (Marburg)
- P9** Analysis of molecular determinants for agonist specific voltage sensitivity of the μ -opioid receptor
S. B. Kirchhofer, J. G. Ruland, A. Flöser, P. Kolb, M. Bünemann (Marburg)
- P10** Morphine-activated neuronal GIRK currents reflect voltage sensitivity of the μ -opioid receptors
J. G. Ruland (Marburg), S. Klindert (Bath/GB; Marburg), C. P. Bailey (Bath/GB)
M. Bünemann (Marburg)



- P11** Systems neuropharmacology of opioid receptor blockade in social fear learning in humans
J. Haaker (Hamburg, Stockholm/SE), B. Lindström (Zurich/CH), J. Yi, P. Petrovic A. Olsson (Stockholm/SE)
- P12** Characterization of molecular mechanisms of Veldoreotide, a pan-somatostatin analogue
P. Dasgupta, T. Günther, S. Schulz (Jena)
- P13** Platelet expression of sphingosine-1-phosphate receptors S1PR1-5 – shedding light on autocrine S1P signaling
E. Moritz, R. Wolf, C. Roll, K. Gelaeva, M. V. Tzvetkov, G. Jedlitschky B. H. Rauch (Greifswald)
- P14** Calcium entry in cardiac fibroblasts contributes to fibrotic processes
A. Rehman, W.-H. Zimmermann, S. Lutz (Goettingen)
- P15** Stability of high affinity GPCR-G protein complexes as a measure of GPCR-G protein selectivity
O. Ilyaskina, A.-L. Krett, M. Bünemann (Marburg)
- P16** Co-internalization of arrestin3 with G protein-coupled receptors is independent of ubiquitination of Lys11 or Lys12
N. Mösslein, D. Zindel (Marburg), J. K. S. Tiemann (Leipzig), M. E. Sommer (Berlin) P. W. Hildebrand (Leipzig), M. Bünemann, C. Krasel (Marburg)
- P17** Histamine H1 receptors mediate flow-induced vasodilation
U. Storch (Munich), S. Erdogmus, L. Danner (Munich), A. Wirth S. Offermanns (Bad Nauheim, Heidelberg), T. Gudermann M. Mederos y Schnitzler (Munich)
- P18** Effects of physiological temperature on signaling and gene expression
D. Faro, T. Gudermann, I. Boekhoff, A. Breit (Munich)
- P19** Effect of cell surface expression and linker sequences on the recruitment of arrestin to the GIP receptor
S. Al-Sabah, L. Adi (Kuwait/KW), M. Bünemann, C. Krasel (Marburg)
- P20** Multisite phosphorylation is required for sustained interaction with GRKs and arrestins during rapid μ -opioid receptor desensitization
E. Miess (Jena), A. B. Gondin (Victoria/AU), A. Yousuf (Sydney/AU) R. Steinborn (Jena), N. Mösslein, Y. Yang, M. Göldner, J. G. Ruland M. Bünemann, C. Krasel (Marburg), C. J. MacDonald (Sydney/AU) M. L. Halls (Victoria/AU), S. Schulz (Jena), M. Canals (Victoria/AU)



- P21** Dynamic receptor conformations influence residence time for different ligands and subsequent G-protein activation
A. Godbole, N. Rüttiger, N. Ziegler, C. Hoffmann (Jena)
- P22** Evidence for functional interaction between cannabinoid receptor 2 and β 2-adrenergic receptor
L. Mensching, A. Sharaf, S. Rading, C. Keller (Hamburg)
M. Scheffold (Hamburg, Ulm), V. O. Nikolaev, M. Karsak (Hamburg)
- Pharmacology – Cyclic nucleotides**
Chair R. Feil (Tuebingen)
- P23** $G\alpha i3$ /GFP-reporter mouse – an investigational tool for visualization of $G\alpha i3$
I. A. M. Groh, A. Speidel, V. Leiss, J. Weischedel, L. Koob, B. Nürnberg
S. Beer-Hammer (Tuebingen)
- P24** cGMP imaging in neurosensory tissues
M. Wolters, Z. Zhao, D. Möhrle, M. Knipper, T. Euler, R. Feil (Tuebingen)
- P25** Phosphorylation of juxtamembrane serine and threonine residues of guanylyl cyclase B is essential for sensory axon bifurcation
H. Schmidt (Tuebingen, Berlin), D. M. Dickey (Minneapolis, MN/US)
A. Dumoulin (Berlin), M. Octave (Tuebingen), J. W. Robinson (Minneapolis, MN/US)
R. Kühn (Berlin), R. Feil (Tuebingen), L. R. Potter (Minneapolis, MN/US)
F. G. Rathjen (Berlin)
- P26** cCMP exerts immunomodulatory functions in astrocytes
J. Scharrenbroich, S. Wolter, S. Kälble, R. Seifert, E. Schneider (Hannover)
- P27** Annexin A4 – a specific inhibitor of adenylyl cyclase type 5
C. Rolfes, H. Alexander, A. Klemme, M. Domnik, F. Ulrich Müller (Muenster)
- P28** Real-time cGMP imaging reveals the spatiotemporal activity of sGC modulators in the kidney
D. Stehle, S. Feil (Tuebingen), A. Bénardeau (Wuppertal)
R. Feil (Tuebingen)
- P29** Characterization of cyclic nucleotide phosphodiesterases potentially involved in pain processing
T. Groß, J. Petersen, L. Kennel, J. Schlaudraff, D. Del Turco, R. Lu
W. Kallenborn-Gerhardt, A. Schmidtko (Frankfurt a. M.)
- P30** Elucidating the role of the effector protein ExoY in *Pseudomonas aeruginosa* infections
B. Schirmer, C. Kloth, J. Rothschuh, A. Munder, R. Seifert (Hannover)



- P31** Distinct functions of NO-GC isoforms in the processing of chronic pain
J. Petersen (Frankfurt a. M.), E. Mergia (Bochum), L. Kennel
T. Groß (Frankfurt a. M.), O. Drees, R. Steubing, C. I. Real (Witten)
W. Kallenborn-Gerhardt, R. Lu (Frankfurt a. M.), A. Friebe (Wuerzburg)
D. Koesling (Bochum), A. Schmidtko (Frankfurt a. M.)
- P32** Roles of the NO-sensitive guanylyl cyclases in the induction of COPD
M. Verheyen, M. Peters, A. Bufe, D. Koesling, E. Mergia (Bochum)
- P33** A-kinase anchoring proteins define cAMP compartments in TGF- β 1/cigarette smoke induced lung epithelial-to-mesenchymal transition
M. Schmidt (Groningen/NL), H. Zuo, N. Musheshe, V. O. Nikolaev (Hamburg)
- P34** Does phosphodiesterase 2 protect against cardiac arrhythmia?
M. Fahmi, M. Günscht (Dresden), K. Lorenz (Dortmund), M. Wagner
A. El-Armouche, S. Kämmerer (Dresden)
- LP1** NO-induced cGMP signals of cardiac myocytes originates from connected Fibroblasts
L. Menges, C. Krawutschke (Bochum), A. Füchtbauer (Aarhus/DK)
P. Sandner (Wuppertal), D. Koesling, M. Russwurm (Bochum)
- Pharmacology – Ion channels**
Chair R. Lukowski (Tuebingen)
- P35** Sulfur mustard induced expression of heat shock 70 kDa Protein 6 (HSPA6) is dependent on transient receptor potential channel A1 (TRPA1) channels
R. Lüling, H. John, H. Mückter, A. Dietrich, T. Gudermann, H. Thierman, T. Popp
D. Steinritz (Munich)
- P36** Store-operated (SOCE) and receptor-operated Ca²⁺ entry (ROCE) in STIM1/2- and TRPC1/6-deficient primary murine lung fibroblasts
L. Bendiks, T. Gudermann (Munich), S. Feske (New York, NY/US)
A. Dietrich (Munich)
- P37** Influence of EF-hand phosphorylation on biophysical gating properties of CaV1.3 voltage-gated calcium channels
S. Salamon, S. Herzig, E. Kuzmenkina, J. Matthes (Cologne)
- P38** Regulation of GIRK current by α 1B- and ET1-receptors
A. Niemeyer, A. Rinne, L. Pott, M.-C. Kienitz (Bochum)



- P39** Optical membrane potential acquisition in human atrial engineered heart muscle constructs and human atrial biopsies
F. Seibertz, R. A. Solano, K. Ort, L. Cyganek, I. Kutschka, W.-H. Zimmermann
 N. Voigt (Goettingen)
- P40** Tri-agonist-induced PLC activation is associated with robust insulin secretion from murine islets
N. Khajavi (Munich, Berlin), B. Finan (Munich), O. Kluth (Nuthetal)
 T. D. Müller (Munich), S. Mergler (Berlin), A. Schulz (Leipzig), G. Kleinau
 P. Scheerer (Berlin), A. Schürmann (Nuthetal), T. Gudermann
 M. H. Tschöp (Munich), H. Krude (Berlin)
 R. D. DiMarchi (Bloomington, IN/US), H. Biebermann (Berlin)
- P41** TRPC1-mediated currents in heterologous expression and isolated pituitary cells
 B. Wardas, H. Wang, A. Raza, S. Mannebach-Götz, U. Wissenbach, A. Beck
 V. Flockerzi (Homburg)
- P42** Identification of inhibitory Ca²⁺ binding sites in the upper vestibule of the yeast vacuolar TRP channel
M. Amini, H. Wang, A. Belkacemi, G. Schlenstedt, V. Flockerzi, A. Beck (Homburg)
- P43** Electrophysiological characterization of TRPV2 in mouse microglia
M. Malihpour, V. Flockerzi, T. Belkacemi, A. Beck (Homburg)
- P44** Ca²⁺ transport via TRPV6 is regulated by rapid internalization of the channel
A. Kogel (Leipzig), C. Fecher-Trost, U. Wissenbach, V. Flockerzi (Homburg)
 M. Schaefer (Leipzig)
- Pharmacology – Drug transport and metabolism**
 Chair M. Fromm (Erlangen)
- P45** Expression, localization and functional analysis of cancer type OATP1B3 in different stably transfected cell lines
B. Haberkorn, J. König, M. Fromm (Erlangen)
- P46** Regulation of the basal promoter activity of the human MRP4 (ABCC4) transporter
 A. Kragl, K. Ziems, J. Glaubitz, S. Grammbauer, S. Bröderdorf (Greifswald)
 S. P. C. Cole (Kingston, ON/CA), M. V. Tzvetkov, G. Jedlitschky (Greifswald)
- P47** Stereoselective uptake of fenoterol and atenolol by the organic cation transporter OCT1
O. Jensen, M. Rafehi, J. Brockmöller (Goettingen)
- P48** OATP1A2 is an uptake transporter for the sympathomimetic drug formoterol
 T. Kuusik, M. Hasan, M. V. Tzvetkov, M. Grube (Greifswald)



- P49** The role of DNA methylation and hydroxymethylation for the expression of the lactate transporter MCT4/SLC16A3 in primary clear cell renal cell carcinoma and distant metastases
P. Fisel (Stuttgart, Tuebingen), D. Schollenberger, S. Rausch (Tuebingen)
S. Winter (Stuttgart, Tuebingen), S. Kruck, J. Hennenlotter (Tuebingen)
A. T. Nies (Tuebingen, Stuttgart), M. Scharpf, F. Fend, J. Bedke (Tuebingen)
M. Schwab, E. Schaeffeler (Stuttgart, Tuebingen)
- P50** Functional comparison of the organic anion transporting polypeptide 1B3 of humans and macaca fascicularis
K. Brecht (Basel/CH)
- P51** Drug-metabolizing enzymes are regulated by inflammation-associated microRNAs
N. Kugler, K. Klein, U. M. Zanger (Stuttgart, Tuebingen)
- P52** Molecular characterisation of the human farnesyltransferase beta-subunit
A. Hagemann (Witten), M. Bermudez (Berlin), G. Müller (Essen), R. Maltaner
H. S. Bachmann (Witten)
- P53** From sphingosine to S1P – a study of turnover rates in different human blood cells
R. Moj, E. Moritz, S. Römer, R. Wolf, M. V. Tzvetkov, B. H. Rauch (Greifswald)
- P54** Compensatory mechanisms for methylglyoxal detoxification in experimental & clinical diabetes
J. Morgenstern, N. Volk, D. Schumacher, Y. Oguchi (Heidelberg)
S. Kopf (Heidelberg, Neuherberg), J. B. Groener, P. Paul Nawroth
T. Fleming (Heidelberg Neuherberg), M. Freichel (Heidelberg)
- P55** Targeting mitochondria overcomes resistance to cisplatin-induced apoptosis of high grade serous ovarian cancer
M. Kleih, K. Böpple, A. Gaißler, M. Dong, S. Heine, F. Essmann
W. E. Aulitzky (Stuttgart)
- P56** Putative interaction and activity of a yeast/human hybrid geranylgeranyltransferase
A. Schulte, D. Jung, R. Maltaner, A. Hagemann, H. S. Bachmann (Witten)
- LP2** Establishment of a novel, cell-based Autotaxin Assay
C. Dobersalske, M. Grundmann, A. Timmermann, F. Koelling (Wuppertal)
R. Harris (Nashville, TN/US), C. Fuerstner, M. Becker, F. Wunder (Wuppertal)



Toxicology – Toxins

- P174 Utilizing the anthrax toxins transport component PA63 as delivery tool for the tumor metastasis suppressor protein NDPK-A
I. Felix, H. Barth (Ulm), T. Wieland (Mannheim)
- P175 Expression of the cell surface receptors of *Clostridioides difficile* Toxin B and their ineffective/lack of internalization
D. Schöttelndreier, H. Genth, R. Lindner, M. Winny, G. Grassl (Hannover)
- P176 C3-mediated anti-proliferative effect is Rac1-dependent
A. Rohrbeck, J. Schulze, A. Hartmann, L. Heinkele, A. Warnecke, T. Lenarz, S. Hagemann, I. Just (Hannover)
- P177 Inhibition of endosomal/lysosomal degradation protects cellular C3
A. Rohrbeck, S. Hagemann, I. Just (Hannover)
- P178 Innovative detection of *Clostridium perfringens* enterotoxin based on receptor interaction
T. Neumann, M. Krüger (Berlin), J. Weisemann, S. Marhold, A. Rummel (Hannover), B. G. Dorner (Berlin)
- P179 Combined pharmacological inhibition of cellular chaperones protects cells from intoxication with *Clostridium botulinum* C2 toxin
K. Ernst, C. Kling, M. Landenberger, H. Barth (Ulm)
- P180 Cysteine 2232 in *Clostridioides difficile* TcdB modulates receptor binding
C. Schneider, S.-Y. Chung, R. Gerhard (Hannover)
- P181 Effect of *Clostridioides difficile* TcdB on production and metabolism of reactive oxygen species
R. Gerhard, L.-A. Beer (Hannover)
- P182 Binding of the *Yersinia pseudotuberculosis* cytotoxic necrotizing factor (CNFY) to its cellular receptor
S. Kowarschik, G. Schmidt (Freiburg i. Br.)



Toxicology – Nanomaterials

- P183 Preparation and different sterilisation approaches for magnetic nanoparticles: towards industrial production
O. Ibarrola Moreno (Miñano/ES)
- P184 Results and objectives of the SolNanoTOX project
H. Sieg, L. Böhmert, A. Braeuning, A. Lampen, K. Schultrich (Berlin)
- P185 Characteristics of different zinc oxide nanoparticles and their cytotoxic & genotoxic effects on human gut cells
N. Hirschfeld, A. Mittag, T. Schneider, M. Gleis (Jena)
- P186 Investigation on the toxic potential of zinc oxide nanoparticles in human intestinal cell
A. Mittag, M. Gleis (Jena)
- P187 Comparison of potential adverse effects of engineered metal nanoparticles on human intestinal cells
T. Schneider, M. Gleis (Jena)
- P188 Analysis of toxicological effects of metal oxide nanoparticles on human Caco-2 cells by flow cytometry
D. Steinmetz, T. Schneider, M. Gleis (Jena)
- P189 Validation of an exposure system for cell cultures with BaSO₄ aerosols
F. Glahn (Halle a. d. S.), M. Bacanlı (Ankara/TR), B. Schumann, D. Schneider
O. Krings, H. Foth (Halle a. d. S.)
- P190 Adverse effects of long and straight multiwalled carbon nanotubes on cytoskeleton, nuclear lamina, and genome-wide transcriptome of primary human mesothelial cells
S. M. Reamon-Buettner, I. Voepel, A. Hiemisch (Hannover), V. Eckert (Dresden)
D. Schaudien, C. Ziemann (Hannover)
- P191 Extension of neutrophilic life span after carbon nanoparticle exposure: a toxicologically relevant endpoint for nanoparticle safety
T. Hornstein, T. Spannbrucker, K. Unfried (Duesseldorf)
- P192 Carbon nanoparticles induce cell cycle arrest, senescence and loss of gap junctional intercellular communication in lung epithelial cells
T. Spannbrucker, N. Ale-Agha, T. Hornstein, J. Haendeler
K. Unfried (Duesseldorf)

**Toxicology – Biomonitoring and biomarkers**

Chair K. Abraham (Berlin)

- P193** Short-term urinary biomarkers of exposure to fatty acid esters of 2-/3-MCPD and glycidol – a human intervention study
K. Abraham, J. Hielscher, J. Kuhlmann, B. Monien, A. Lampen (Berlin)
- P194** The explosive trinitrotoluene (TNT) induces carbonyl reductase in the Blue mussel (*M. edulis*)
J. S. Strehse (Kiel), M. Brenner (Bremerhaven), M. Kisiela, K. Köbsch E. Maser (Kiel)
- P195** Biomonitoring of mycotoxins in human milk samples from Lower Saxony and Bavaria/Germany (LUPE 8)
K. Muñoz (Landau), S. Groschupp (Landau, Hannover), R. Huppmann (Hannover) H. Fromme (Munich), K.-M. Wollin (Hannover)
- P196** Biomonitoring of heat-induced food contaminants – quantitative analysis of furan dependent glutathione- and lysin-adducts in rat urine as putative biomarkers of exposure
D. Karlstetter, A. Mally (Wuerzburg)
- P197** Pesticide concentrations in urine of preschool children – results of the 2nd human biomonitoring study in North Rhine-Westphalia Germany
Y. Chovolou, S. Sievering, J. Engelmann (Essen), T. Göen (Erlangen) T. Schettgen (Aachen), M. Kraft (Essen)
- P198** Fully automated dried blood spot analysis to screen large populations fast and cost effectively
S. Gaugler (Muttentz/CH; Zaragoza/ES)
- P199** Exposure assessment of volatile organic compounds from consumer products
M. Even, M. Girard, A. Rich, C. Hutzler, A. Luch (Berlin)
- P200** UDEMM: ÖkoToxEMM – toxicological and environmental monitoring of the emission of pollutants from munition in the sea
D. Appel, J. S. Strehse, H.-J. Martin, E. Maser (Kiel)
- P201** Sorption of perfluoroalkyl acids and their alternatives DONA and HFPO-DA (GenX) to serum albumin
F. Allendorf, N. Ulrich, U. Berger, K.-U. Goss (Leipzig)

Toxicology – Toxicological methods and *in vitro* toxicology

- P202 A fluorometric method to measure cell death in intestinal organoids
K. Bode, S. Müller, T. Brunner (Konstanz)
- P203 Challenges of exposing human lung cells to sulfur mustard (SM) at the air-liquid interface (ALI) *in vitro*
A. Tsoutsouloupoulos (Munich), M. Siegert (Munich, Berlin), H. John (Munich)
T. Zubel, A. Mangerich (Konstanz), A. Schmidt (Neubiberg, Munich), H. Mückter
T. Gudermann, H. Thiermann, D. Steinritz, T. Popp (Munich)
- P204 iPSC and iPSC-derived proximal tubule cells differ in their response to nephrotoxic substances
C. Hirsch, G. Fritz, J. Adjaye, N. Schupp (Duesseldorf)
- P205 Colonizing 3D-skin – impact on cutaneous gene transcription
L. Lemoine, A. Luch, T. Tralau (Berlin)
- P206 A targeted transcriptomic and proteomic approach to assess hepatotoxic mixture effects *in vitro*
A. Braeuning, D. Lichtenstein (Berlin), A. Mentz, J. Kalinowski (Bielefeld), F. Schmidt
O. Pötz (Reutlingen), A. Lampen (Berlin)
- P207 Comparison of hepatoblastoma cells (HepG2) and immortalized primary human hepatocytes (Fa2N-4) after bisphenol A exposure
F. Padberg, A. Luch, S. Zellmer (Berlin)
- P208 Comparative analysis of tobacco heating system and combustion of conventional cigarettes on osteogenic differentiation of mesenchymal stem cells and human osteoblasts
R. Aspera-Werz, M. Müller, T. Chen, S. Zhu, S. Ehnert, A. Nüssler (Tuebingen)
- P209 Alkenylbenzenes modulate the expression of phase II enzymes in human liver carcinoma cells
L. Müller, T. Uebel, M. Esselen (Muenster)
- P210 Effect of different oxygen concentrations on the metabolic activity of Huh7 cells
M. Ruoff, N. J. Adamtey, D. Huber, A. Nüssler (Tuebingen)
- P211 Are the existing OECD-guided *in vitro* and in chemico methods for skin sensitization testing applicable for “real life” industrial chemicals?
K. Tegethoff, D. Beyer (Wuppertal), H. Bluhm (Leverkusen)



- P212** Influence of doxorubicin on differentiation of mouse embryonic stem cells (mESC) into mESC-derived cardiovascular cells
S. K. Jahn, G. Fritz (Duesseldorf)
- P213** Targeting the mechanisms of DNA damage response (DDR) to overcome anticancer drug resistance of tumor cells
J. van Stuijvenberg, G. Fritz (Duesseldorf)
- P214** Eukaryotic cell-free systems – a novel platform technology for production and functional characterization of pore-forming toxins
F. Ramm, S. K. Dondapati, A. Zemella, L. Thoring, M. Stech
S. Kubick (Potsdam-Golm)
- P215** How new paradigms can improve efficiency in drug development
G. Bode (Goettingen)
- P216** An advanced non-animal model for cultivation and pharmacological perturbation of human tumor tissue
K. Böpple, M. Dong, B. Winkler, N. Janssen, M. Kleih, F. Essmann (Stuttgart)
H. Walles (Wuerzburg), G. Ott, M. Schwab (Stuttgart, Tuebingen)
W. E. Aulitzky (Stuttgart)
- P217** Knock-down of the arylhydrocarbon receptor in the human monocytic cell line MUTZ-3
A. Sonnenburg, R. Stahlmann, M. Peiser, R. Kreutz (Berlin)
- P218** Investigation of the influence of Kupffer cell reactions in drug mediated hepatotoxicity
A. Lohrenz, G. Schicht, C. Rennert, V. Kegel, D. Seehofer, G. Damm (Leipzig)
- P219** Simplified determination of plasma protein binding via ultracentrifugation and *in silico* modeling – Can we trust the results?
D. Dimitrijevic, E. Fabian, C. Haase, M. Mathea, J. G. Keller, B. van Ravenzwaay
R. Landsiedel (Ludwigshafen a. R.)
- P220** Characterization of site-specific nephrotoxicity in embryonic Zebrafish
B. Bauer, E. Stammler, D. Liedtke, A. Mally (Wuerzburg)
- P221** HepaChip-MWP – an organ-like perfusable cell culture system in multiwell plate format for pre-clinical drug and substance testing
M. Busche, B. Hagemeyer, C. Schmees, S. Werner (Reutlingen)
J. Schütte (Tuebingen), M. Pawlak (Reutlingen), H. Becker, J. Schnabel (Jena)
R. Hemmler, K. Gall (Osnabrück), A. Ullrich (Schwerin), M. Matz-Soja
R. Gebhardt (Leipzig), M. Stelzle (Reutlingen)



- P222** Identification of potential emerging chemical risks in food from REACH registered chemicals
O. Licht, A. Bitsch (Hannover), M.-L. Bohlen (Freiburg i. Br.), S. E. Escher (Hannover)
G. Kass, C. Merten (Parma/IT), M. MacLeod (Stockholm/SE)
H. Noteborn (Utrecht/NL), M. Schwarz, J. Oltmanns (Freiburg i. Br.)
V. Silano (Rome/IT)
- P223** Recent development in alternative testing methods for drugs and their regulatory acceptability
S. Mahr (Potsdam), E. Röhrdanz (Bonn), G. Bode (Goettingen)
- P224** Combination of implants for CSF collection and EEG recording in the same dogs potentially enables improved characterization of CNS adverse effects
L. Breidenbach (Ludwigshafen a. R.), K. Mirakhur (Lake County, FL/US)
K. Hempel (Ludwigshafen a. R.)
- P225** The Cultex® RFS based validated alternative method for screening acute toxicity of inhalable dusts *in vitro*
M. Aufderheide (Hannover), N. Möhle (Hannover), A. Tsoutsoulopoulos
K. Gohlsch (Munich), O. Krischenowski (Hannover), A. Breit, H. Mückter
T. Gundermann (Munich), S. Hoffmann (Paderborn), H. Thiermann
D. Steinritz (Munich)
- P226** Case study: Skin sensitization non-animal risk assessment – determination of an induction threshold for use in risk assessment
M. T. Schellenberger (Trier), C. Goebel (Darmstadt), B. Blömeke (Trier)
- P227** Regarding the references for reference chemicals of alternative methods
S. Kolle (Ludwigshafen), E. Hill (Gaithersburg, MD/US)
M. Remmele (Ludwigshafen), H. Raabe (Gaithersburg, MD/US)
R. Landsiedel (Ludwigshafen), R. Curren (Gaithersburg, MD/US)
- P228** Long-term treatment with HEMA is associated with persistent up-regulation of redox-regulated cytoprotective proteins in oral keratinocytes
J. Volk, R. Perduns, P. Schertl, M. Wessels, G. Leyhausen, A. Beckedorf
W. Geurtsen (Hannover)
- P229** Potential promotion of attractiveness by cooling agents in tobacco: investigations of enantioselective TRPM8 receptor activation
N. Mallock, F. Morano, E. Pieper, F. Henkler-Stephani, C. Hutzler
A. Luch (Berlin)

**General – Education**

Chair L. Hein (Freiburg)

- P230** A learning and assessment tool for formal drug prescribing errors
L. Wojnowski, B. Stollhof, M. Behrens, K. Buck (Mainz)
- P231** PubPharm – the search engine for pharmacology, toxicology & pharmacy-specific literature
C. Draheim, K. Keßler, H. Kroll, J. Wawrzinek, S. Wulle, W.-T. Balke
K. Stump (Braunschweig)
- P232** “Welcome to our online-experiment” – doing problem-based learning as blended learning
U. Servos, Y. Karay, B. Reiß, C. Stosch, J. Matthes (Cologne)
- P233** Do test results in basic and clinical pharmacology predict medical students’ performance in the German state examination (M2)?
U. Gergs, A. Aslan, S. Simmrodt, J. Neumann (Halle a. d. S.)

**Pharmacology – Cardiovascular pharmacology I**

Chair J. Fischer (Duesseldorf)

- P57** Impact of pharmacological RSK inhibition on cardiac myocyte protein phosphorylation and function
K. Stathopoulou, S. Schobesberger, H. Sotoud (Hamburg), J. U. Sprenger
R. K. Perera (Hamburg, Goettingen), A. Piasecki, T. Christ
V. O. Nikolaev (Hamburg), M. Avkiran (London/GB), F. Cuello (Hamburg)
- P58** Up-regulation of heme oxygenase-1 expression and inhibition of pro-atherogenic features by cannabidiol in vascular smooth muscle cells
M. Schwartz, S. Böckmann, B. Hinz (Rostock)
- P59** DNA methyltransferase 1 is crucial for embryonic cardiac development
T. Matschulla, L. Frommherz, C. Schwan, R. Gilsbach, O. Kretz (Freiburg i. Br.)
T. Nührenberg (Bad Krozingen, Freiburg i. Br.), L. Hein (Freiburg i. Br.)
- P60** Transcriptional profiles influenced by inhibition of epigenetic erasers and readers in embryonic stem cell-derived cardiomyocytes
V. Ngo, L. Hein (Freiburg i. Br.)
- P61** Effects of TSN3015 on the development of pulmonary arterial hypertension in male Sprague-Dawley rats
K. R. Doherty, P. B. Senese (Chicago, IL/US), D. Bullough (Carlsbad, CA/US)
V. Carreira (Mason, OH/US), M. R. Gralinski (Chicago, IL/US), F. J. Hock (Dieburg)
- P62** A new approach for characterization of reticulated platelets
L. Hille, T. Nührenberg, C. Stratz (Bad Krozingen), L. Hein
A. Vlachos (Freiburg i. Br.), F.-J. Neumann, D. Trenk (Bad Krozingen)
- P63** Ischemia and reperfusion in the mouse heart overexpressing the 5-HT4 receptor
C. T. Schmidbauer, N. Mißlinger, U. Gergs, J. Neumann (Halle a. d. S.)
- P64** Cardiac function in young and old PP2AxPP5 overexpressing mice
M. Dörner, U. Gergs, J. Neumann (Halle a. d. S.)
- P65** Muscarinic effects in cardiac preparations of PP2A transgenic mice
T. Fuhrmann, U. Gergs, J. Neumann (Halle a. d. S.)
- P66** Altered signaling and gene expression after ischemia/reperfusion in 5-HT4 receptor overexpressing mouse hearts
C. Röttger, U. Gergs, C. T. Schmidbauer, J. Neumann (Halle a. d. S.)



P67 The effect of histamine and serotonin on transgenic mice co-overexpressing human 5-HT4- and H2-receptors in the heart
D. Schwarzer, U. Gergs, J. Neumann (Halle a. d. S.)

P68 Influence of 5-HT4-receptors on the impact of hypoxia in the mouse heart
J. Wittschier, U. Gergs, J. Neumann (Halle a. d. S.)

Pharmacology – Cardiovascular pharmacology II

Chair A. El-Armouche (Dresden)

P69 Asymmetrically paced engineered heart tissue recapitulates dyssynchrony-associated contractile impairment
J. Stenzig, M. N. Hirt, M. Lemme, M. Lemoine, G. Höppner (Hamburg)
Y. Etzion (Beer-Sheva/IL), T. Eschenhagen (Hamburg)

P70 The bradykinin B2 receptor enhances atherosclerotic lesion formation in hypercholesterolemic ApoE-deficient mice
A. Perhal, S. Wolf, A. Langer, U. Qwitterer (Zürich/CH)

P71 Transgenic mice with myocardium-specific expression of SCD1 develop symptoms of heart failure
Y. F. Jamous, A. Perhal, U. Qwitterer, J. Abd Alla (Zürich/CH)

P72 Search for the source of the retinal relaxing factor
J. Van de Voorde, L. Vanden Daele, C. Boydens, J. Devoldere
K. Remaut (Ghent/BE)

P73 Regulation of the beta-adrenergic pathway and cardiac annexins in anx4a-/- gene-trap mice chronically stimulated with isoproterenol
M. Domnik, F. Pluteanu, C. Rolfes, A. Klemme, A. Heinick
F. Ulrich Müller (Muenster)

P74 Identification of novel Annexin A4 and Adenylylcyase 5 binding proteins by co-immunoprecipitation and mass spectrometry
A. Klemme, C. Rolfes, M. Domnik, A. Heinick, S. König, F. U. Müller (Muenster)

P75 Protective, antiarrhythmic induction of PP2A activity in CREM knockout mice: role of phosphatase subunits
J. S. Schulte, M. Tekook, E. Fehrmann, P. Boknik, M. D. Seidl
F. U. Müller (Muenster)

P76 Crtc1-deficient mice show reduced induction of fibrosis under isoprenaline treatment
K. Morhenn (Hamburg), K. Saar, N. Hübner (Berlin), E. Oetjen (Hamburg)



- P77** Deletion of the short cAMP response element modulator (CREM) isoforms, inducible cAMP early repressor (Icer) and small Icer (smlcer), leads to impaired cardiac contraction
M. D. Seidl, K. Grimm, C. Rolfes, A. Sternberg, J. S. Schulte, F. U. Müller (Muenster)
- P78** Remodeling of nuclear calcium handling in human atrial fibrillation
D. Hoffmann, I. Abu-Taha (Essen), X. Yan Qi (Montreal/CA), M. Kamler (Essen) S. Nattel (Montreal/CA), D. Dobrev (Essen)
- P79** Chronically isoproterenol-stimulated annexin A4 deficient mice developed earlier electrical remodeling and hypertrophy at cellular level
F. Pluteanu, M. Domnik, C. Rolfes, A. Klemme, A. Heinick, F. U. Müller (Muenster)

Pharmacology – Cardiovascular pharmacology III

Chair U. Ravens (Freiburg i. Br.)

- P80** Characterization of Raf kinase inhibitor protein (RKIP) in ischemic stroke
C. Mathejka, C. Schanbacher (Dortmund), M. Bieber (Wuerzburg) F. Langhauser (Essen), C. Kleinschnitz (Essen, Wuerzburg) K. Lorenz (Essen, Wuerzburg, Dortmund)
- P81** MiR-365 regulates action potential duration of the human cardiac myocyte
D. Esfandyari, B. M. Gheo Idrissou, M. Meier, A. Näger, S. Engelhardt (Munich)
- P82** Argonaute immunoprecipitation and RNA sequencing to identify the targets of microRNAs-21 and -29 in the mammalian heart
C. Beck, D. P. Ramanujam, J. Kerler, A. P. Schön, S. Engelhardt (Munich)
- P83** Wnt nuclear complex recruits stage-specific partners in heart maturation and disease
S. T. Pang, L. M. Iyer (Goettingen), K. Zühlke, E. Klußmann (Berlin) L. Zelarayan (Goettingen)
- P84** Vascular smooth muscle cell function and plasticity are controlled by Cysteine-rich LIM-only protein 4 (CRP4)
N. Längst, J. Straubinger, R. Lukowski (Tuebingen)
- P85** Endothelial mineralocorticoid receptor deletion changes cardiac macrophage properties in experimental heart failure
L. Deng, I. Hilgendorf, T. Kehl, T. Schnick, M. Moser, C. Bode, L. Hein A. Lothar (Freiburg i. Br.)



- P86** Cardiac overexpression of PP2C β in mice leads to ventricular dilatation and alters diastolic cardiac function
P. Bollmann, U. Gergs, J. Neumann (Halle a. d. S.)
- P87** Gastrointestinal bleeding under vitamin K antagonists and direct oral anticoagulants – a retrospective analysis at the University Hospital Basel
Y. Schmid, L. Nussbaum, S. Bassetti, L. Degen, A. Holbro, D. Tsakiris, S. Krähenbühl, A. Leuppi-Taegtmeier (Basel/CH)
- P88** Type-2 diabetes mellitus exacerbates I/R-induced depression of cardiomyocyte Ca²⁺ cycling in the remote myocardium
F. Funk, A. Kronenbitter, M. Krüger, J. P. Schmitt (Duesseldorf)
- P89** Glucosamine treatment protects retina from hyperglycemia-induced neuronal dysfunction in diabetic mice
R. Eshwaran, M. Kolibabka, K. Kohl, H.-P. Hammes, T. Wieland, Y. Feng (Mannheim)
- P90** Cysteine-rich lim only protein 4 (CRP4) and intracellular calcium dynamics in cardiomyocytes
M. Cruz Santos, J. Straubinger, R. Lukowski (Tuebingen)

Pharmacology – Immune pharmacology and inflammation

Chair

M. Kracht (Gießen)

- P91** Evaluation of the anticonvulsant activity of the hydro-ethanolic leaf extract of *Brillantaisia patula* T. Anders. (Acanthaceae) in mice
O. Salako, D. Akinoso, A. Akindele, O. Adeyemi (Idi-Araba, Mushin/NG)
- P92** Integrative -omics analysis to identify drug targets for ccRCC immunotherapy
A. Reustle (Stuttgart, Tuebingen), M. Di Marco (Tuebingen), C. Meyerhoff, S. Winter, F. Büttner, P. Fisel (Stuttgart, Tuebingen), L. Backert, S. Rausch, J. Hennenlotter, M. Scharpf, F. Fend, A. Stenzl, J. Bedke, H.-G. Rammensee, S. Stevanović (Tuebingen), M. Schwab, E. Schaeffeler (Stuttgart, Tuebingen)
- P93** Identification and characterization of novel and selective TLR8 inhibitors
M. Grabowski, D. Ribar, M. S. Murgueitio, M. Bermudez, G. Wolber, G. Weindl (Berlin)
- P94** β -Glucan training differentially induces trained innate immunity and tolerance in primary monocytes and THP-1-derived macrophages
J. Bockstiegel, G. Weindl (Berlin)



- P95 Activation of inflammatory genes by CRISPR activation systems
J. Meier-Sölch, S.-S. Weiterer, L. Jurida, S. Ludwig, D. Newel, M. Kracht (Giessen)
- P96 Generation and activation of myeloid-derived suppressor cells using Prostaglandin E2 and EP receptor agonists in vitro
C. van Geffen, S. Beer-Hammer, B. Nürnberg, S. Kolahian (Tuebingen)
- P97 Characterization of a novel gain-of-function mutation in the interferon-dependent transcription factor STAT1
J. Staab, T. Florian Schwämmle, S. V. Fangauf, T. Meyer (Goettingen)
- P98 *Mentha longifolia* protects against acetic-acid induced colitis in rats
H. Murad (Jeddah/SA, Cairo/EG), H. Abdallah, S. Ali (Jeddah/SA)
- P99 Evidence for the involvement of histamine H4-receptor function in the pathogenesis of experimental inflammation-associated colorectal carcinoma
T. Rother, B. Schirmer, R. Seifert, D. Neumann (Hannover)

Pharmacology – Cancer pharmacology and treatment

Chair

P. Gierschik (Ulm)

- P100 Unraveling the mechanisms of cisplatin-induced nephrotoxicity
S. Schoch, P. Schumacher, S. Gajewski (Karlsruhe), W. Brenner (Mainz)
A. Hartwig, B. Köberle (Karlsruhe)
- P101 Evolving drug resistance in chronic myeloid leukemia – role of RNA-binding proteins ZFP36L1 and ZFP36L2 on imatinib-susceptibility
M. Kähler, I. Vater, I. Cascorbi, I. Nagel (Kiel)
- P102 Non-targeted metabolomic and lipidomic profiling of FFPE tissue samples: method development and proof of concept investigation
S. K. Neef, H. Horn, S. Winter, U. Hofmann, T. E. Muerdter
E. Schaeffeler (Stuttgart, Tuebingen), G. Ott (Stuttgart), M. Schwab
M. Haag (Stuttgart, Tuebingen)
- P103 The activated coagulation factor-X (FXa) directly impacts the proliferation and migration of different colorectal cancer cell lines
U. Meyer, E. Moritz, B. H. Rauch (Greifswald)
- P104 Effect of different B cell receptor signaling inhibitorson Ca²⁺ responses in chicken B cells expressing phospholipase C- γ 2mutants mediating ibrutinib resistance in chronic lymphocytic leukemia
S. Endres, M. Wist, A. Schade, J. Haas, P. Papatheodorou, P. Gierschik
C. Walliser (Ulm)



- P105** Comparative whole genome analyses of aromatase inhibitor-resistant breast cancer models
R. Hoppe, S. Kandabarau (Tuebingen, Stuttgart), P. Fan
 V. Craig Jordan (Houston, TX/US)
 H. Brauch (Stuttgart, Heidelberg, Tuebingen)
- P106** JAK3 and p38 MAPK inhibitors regulates hepatocellular carcinoma proliferation
M. Goettert, T. Schneider (Lajeado/BR), S. Laufer (Tubingen)
- P107** Role and regulation of RNA binding proteins ZFP36L1 & ZFP36L2 in chronic myeloid leukemia
J. Rodin, M. Kaehler, I. Cascorbi, I. Nagel (Kiel)
- P108** Hyaluronan matrix inhibition enhances metabolic anticancer therapy by dichloroacetate in vitro and in vivo
C. Reichert, S. Twarock, O. Reiners, K. Bach, M. Grandoch, J. W Fischer (Duesseldorf)
- P109** Preclinical evaluation of distribution and efficacy of nanomedicines for oncology
S. Hafner, Z. Zuo, V. Rasche, A.-K. Gaiser, T. Syrjets, T. Simmet (Ulm)
- P110** HER3 signaling in gastric cancer cells – role in resistance against c-met inhibitors and regulation via histone deacetylases, PKC and SATB1
 R. Jenke, M. Rein, F. Lordick, T. Büch, A. Aigner (Leipzig)
- Clinical pharmacology – Disease models, drug development and delivery systems**
- Chair A. Schmidtko (Frankfurt a. M.)
- P111** Changes of microRNA and mRNA expression induced by Zika virus infection in early human neural development
D. Tabari, C. Scholl (Bonn), E. Hildt (Langen), J. Stingl (Bonn)
- P112** Identification and characterization of novel splice variants of human farnesoid X receptor
E.-K. Mustonen (Stuttgart), S. M. Lee, T. Schiergens (Munich)
 M. Schwab (Stuttgart, Tuebingen), O. Burk (Stuttgart)
- P113** Large-scale drug repositioning by inverse safety signals using the OpenVigil 2 pharmacovigilance data analysis tool
R. Böhm, C. Bulin (Kiel), M. Tropmann-Frick (Hamburg), H.-J. Klein
 T. Herdeggen (Kiel)
- P114** Engineered connective tissues as a model for cardiac fibrosis – evidence for the ROCK-actin-LOX axis in regulating fibrotic tissue properties
G. L. Santos (Goettingen; London/GB), A. Ridley (London/GB), W.-H. Zimmermann
 S. Lutz (Goettingen)



- P115** Patient-derived colonic organoids as a model to study pharmacogenetics
N. Janssen, A. Rau (Stuttgart), M. Morkel, C. Sers (Berlin), P. Renner, T. Leibold
M. Dahlke, R. Kontermann, M. Olayioye (Stuttgart)
M. Schwab (Stuttgart, Tuebingen), T. E. Mürdter (Stuttgart)
- P116** NOCANTHER: GMP scale up for Drug Delivery nanosystems
O. Ibarrola Moreno (Miñano/ES)
- P117** Extracellular vesicles for improving nanoparticle-mediated delivery of therapeutic RNAs
P. Zhupanyin, A. Ewe (Leipzig), A. Malek (St.-Petersburg/RU)
A. Aigner (Leipzig)
- Clinical pharmacology – Pharmacokinetics and pharmacodynamics**
- Chair U. Fuhr (Cologne)
- P118** Pharmacokinetic interactions of herbal products with prescribed medications in healthy volunteers – a systematic review and meta-analysis
C. Awortwe, H. Bruckmüller, I. Cascorbi (Kiel)
- P119** Simultaneous quantification of 10 endogenous biomarkers of cardiovascular diseases and renal dysfunction in small volume plasma samples by LC-MS/MS
A. Gessner, M. Mieth, R. Maas, M. F. Fromm (Erlangen)
- P120** miRNA expression in Erlotinib treated keratinocytes and serum samples from Erlotinib treated patients
S. Kemski, C. Scholl, J. Stingl (Bonn)
- P121** Prolonged effect of midazolam with delayed post anesthetic recovery – a case report
E. Abdel-Kahaar, O. Zolk, P. Dieudonné (Ulm)
- P122** Development of a multiplex LC-MS-MS method for comprehensive quantification of drugs with clinically relevant genetic interaction
U. Hofmann (Stuttgart, Tuebingen), R. Tremmel, S. Schricker (Stuttgart)
M. Schwab (Tuebingen, Stuttgart)
- P123** Quantification of ceftolozan from Dried Blood Spots (DBS) with LC-MS/MS
M. Hinderhofer, J. Martens-Lobenhoffer, U. Tröger, S. M. Bode-Böger (Magdeburg)

**Clinical pharmacology – Pharmacogenomics and personalized medicine**

Chair O. Zolk (Erlangen)

- P124** Reassessment of complex CYP2D6 alleles – functional impact of individual SNPs and haplotypes
K. Klein, K. Momoi, U. M Zanger (Stuttgart, Tuebingen)
- P125** A systematic review of the clinical validity and utility of pharmacogenetic guideline recommendations for personalized drug treatment
N. Kapferer, O. Zolk, S. Hafner, E. Abdel-Kahaar (Ulm)
- P126** Influence of CYP2D6 genotypes on Clomiphene metabolism and the clinical efficacy of ovulation therapy with Clomiphene
O. Igel, P. Kröner, E. Schaeffeler, S. Winter, S. Igel (Stuttgart), M. Henes, S. Hübner M. Lenz, D. Wallwiener (Tuebingen), R. Tremmel, R. Kerb, W. Schroth (Stuttgart) M. Schwab (Stuttgart, Tuebingen), T. E. Mürdter (Stuttgart)
- P127** Population pharmacokinetics and pharmacogenetics of tyramine in healthy volunteers
M. Rafehi, F. Faltraco, J. Matthaei, T. Prukop, M. V. Tzvetkov J. Brockmüller (Goettingen)
- P128** A randomized clinical trial on CYP2C19 phenotype-guided omeprazole treatment in mild to moderate gastroesophageal reflux disease
S. Jaeger, S. Igel (Stuttgart), A. Ulmer (Ludwigsburg), E. Schaeffeler C. Schäfer (Stuttgart), J. Metzler (Schwäbisch Gmünd), B. Bokemeyer (Minden) G. von Wichert (Hamburg), U. Klotz, M. Schwab (Stuttgart, Tuebingen)
- P129** Meta-analysis of CYP2B6 polymorphism – clinical evidence towards personalized therapy?
S. Ansari, C. Dücker, J. Brockmüller (Goettingen)
- P130** Quantifying protein biomarkers for drug-induced organ injury across the species barrier
V. Anselm, W. Naboulsi, A. Steinhilber, H. Planatscher, T. Joos
O. Poetz (Reutlingen)

**Clinical pharmacology – Clinical pharmacology and drug therapy**

- Chair M. Wehling (Mannheim)
- P131 Hormones and dementia – a pharmacoepidemiological analysis
J. Hoffmann, W. Gomm, K. Weckbecker, B. Haenisch (Bonn)
- P132 Pattern of adverse drug reactions arising from cancer chemotherapy in a Tertiary care hospital
S. K. Ramasubbu, B. Das, U. Kumar Nath, R. Kumar Pasricha
S. Handu (Rishikesh/IN)
- P133 Highly suspected quality issue of fluorouracil
M. Elhassan Elkarimi, R. Soulaymani (Rabat/MA)
- P134 A new activity for safety use of dietary supplements
C. Morgovan (Arad, Sibiu/RO), A. M. Juncan, A. Butuca, L. L. Rus, L. Vonica
A. Muntean, F. Gligor (Sibiu/RO), S. Ghibu (Cluj-Napoca/RO)
- P135 Drug quality and drug therapy safety in children
S. Leitzen (Odense/DK), M. Vogel, B. Sachs (Bonn), M. Brandl (Odense/DK)
J. Stingl (Bonn)
- P136 Towards European training regulations for medical specialists in (clinical) pharmacology in Europe – interim report
T. Griesbacher (Graz/AT; Brussels/BE)
- P137 Benchmarking pharmacovigilance systems
M. Elhassan Elkarimi, R. Soulaymani (Rabat/MA)

Toxicology – Genotoxicity and carcinogenesis

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**Venue** (see page 78 for a map of the venue)

Haus der Wirtschaft
Willi-Bleicher-Straße 19 · 70174 Stuttgart

Bitte beachten Sie, dass das Treffen der AG Planmäßige Professoren der Experimentellen und Klinischen Pharmakologie und Toxikologie an einem anderen Ort stattfindet (siehe S. 10).

**Conference website**

www.gpts-kongress.de

**General terms and conditions**

Please find our general terms and conditions at www.gpts-kongress.de.

**Cloakroom**

The cloakroom is located in the ground floor.

**Online programme**

For current detailed information regarding the scientific programme, please have a look at our session planner at programm.conventus.de/gpts2019. Compose your individual programme and review it at any time on your way.



You can find a list of invited speakers on the website:

www.gpts-kongress.de/programme/scientific-programme.

**Conference language**

The conference language is English. Sessions that are held in German are marked with a German flag. Short talks have to be presented in English only.

**Evaluation**

Please take a few moments to fill out the evaluation form to help us refine and improve the upcoming conferences. An online evaluation of the congress is available online at www.gpts-kongress.de/evaluation.

**Catering**

During breaks coffee and water will be available in the exhibition area. There will be no catering during lunchtime (except during the Get together on Tuesday and during the lunch symposium on Wednesday).

The venue has a cafeteria in the ground floor where participants can buy food and beverages.

Please note that due to the regulations of the venue, there will be no lunch provided during the Advanced Courses.

**Publication of abstracts**

All abstracts will be published online in the “Naunyn-Schmiedeberg’s Archives of Pharmacology” of the publisher Springer Basel (Basel/CH) and are available online on the conference website www.gpts-kongress.de from 18 February until 14 March 2019.



Certification

The conference is certified by the medical chamber of Baden-Württemberg as follows:

Tuesday, 26 February	Category B	6 Points
Wednesday, 27 February	Category B	6 Points
Thursday, 28 February	Category B	6 Points



Certificate of attendance

Please scan your EFN barcode daily at the EFN certification counter near the check-in. The certificate of attendance will be printed automatically. The points will be transferred to the medical chamber of Baden-Württemberg electronically.

A general certificate of attendance can be printed with the barcode on your name badge at the certification counter.

Your name badge also provides access to the scientific sessions and to the industrial exhibition. Therefore, please wear your name badge during the whole conference.



Awards

During the German Pharm-Tox Summit the following prizes will be awarded during the award ceremony on 27 February, 18:45–19:15, König-Karl-Halle:

- Merck-Young-Scientist Award
- GT-Toxicology-Award

Additionally the best posters and short talks selected from abstract submissions will be honored with an award. A selected jury will review the presentations during the conference. The awards will be given at the closing ceremony on 28 February, 15:00–15:30, König-Karl-Halle. We would like to invite all abstract authors to participate.

The following awards will be given:

Toxicology

- GT poster award
- Toxins-Award (best poster in the field of biological toxins)
- GT short talk-award

Pharmacology

- Poster awards
- Award short talks (Thieme-Verlag)

Clinical pharmacology

- Poster awards
- Award short talks (Thieme-Verlag)



Presentation upload – Media check-in

Speakers can upload their presentation in the speakers' ready room that is located in "Turm B". For submission, please use a USB flash drive, CD or DVD disc that is not protected by any software. Professional staff and equipment will be available for you to arrange and preview your presentation.

Time allocation

Please prepare your presentation for the allotted amount of time. Chairs and moderators may interrupt should you overrun your time limit.

Speakers of short talks have a time frame of 15 minutes (including 3 minutes of discussion time).

Posters

Please note that the poster session will be split into two parts. The allocation of topics to the poster sessions is shown on page 38. The authors are asked to be present at their poster during the respective session for questions and discussion.

Poster session I • Tuesday, 26 February, 13:30–14:30.

Posters should be hung by Monday or Tuesday morning and be removed by Tuesday, 26 February, 17:45.

Poster session II • Wednesday, 27 February, 13:00–14:00.

Posters should be hung by Wednesday morning and be removed by Thursday, 28 February, 13:30.

Pins will be provided on your poster board. Please do not use any other type of pins than those provided. All poster boards will be labelled with a poster number. You can find your poster number in this programme booklet. Posters that have not been removed, will be considered waste.



Tuesday, 26 February

Get together

You are invited to join the Get together with drinks and snacks during the lunch break in the industrial exhibition. Allow yourself interesting conversations with colleagues, old friends, exhibitors and make new acquaintances.

Time	12:45–13:30
Venue	Industrial exhibition
Price	Included in conference fee



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Social evening Forum Junge Wissenschaft

The Forum Young Scientists invites you to the second FJW Science Slam DGPT 2019.

The aim is to present research work comprehensibly, vividly, and entertaining. The audience will decide by applause, who will be awarded with the “Schäfer-Barth-Award” 2019.

Time	19:30–21:00
Location	Café Félix Robert-Bosch-Platz 1 • 70713 Stuttgart
Distance from venue	600 m
Price	EUR 15



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Wednesday, 27 February

Social evening

The “Restaurant Plenum” is located in the Federal parliament of Baden-Württemberg and is one of the best in Stuttgart. You are welcome to a marvelous evening with delicious food and beverages as well as interesting conversations.

Time	19:45–23:30
Location	Restaurant Plenum Konrad-Adenauer-Straße 3 • 70713 Stuttgart
Distance from venue	1 km
Price	EUR 60



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and Allergology (SIICA)

10–13 SEPTEMBER 2019
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Tuesday, 26 February

12:00–12:45 Meet the company

Bertha-Benz-Saal

Chair K. Bestehorn (Duesseldorf)

npi electronic GmbH
PhenoSys GmbH
Promega GmbH
RTC S.p.A.
Stemcell Technologies Germany GmbH

12:00–12:45 Meet the company

Karlsruhe

Chair M. Schwab (Stuttgart, Tuebingen)

Agilent Technologies Sales & Services GmbH & Co.
bio.logis Genetic Information Management GmbH
Cellbox Solutions GmbH
Data Sciences International/Hugo Sachs Elektronik
LGC Standards GmbH

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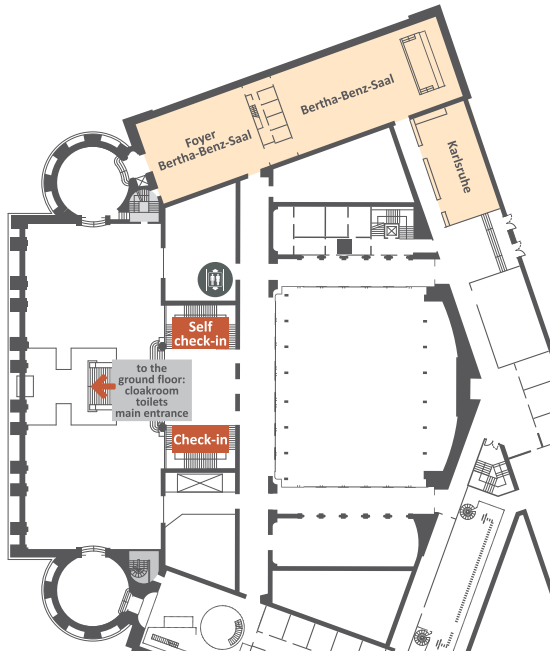


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