Symposium on Behalf of the 40th Anniversary of the Department of Clinical Pharmacology
Sponsors
Thursday, September 12th

Presystemic elimination mechanisms along the entry route of drugs

13.00 - 15.30 (Ingolf Cascorbi, Kurt Bestehorn)

Werner Weitschies (Greifswald)
Physiological preconditions for drug absorption along the gastrointestinal tract.

Marek Drozdzik (Szczecin, Poland)
Expression of mRNA and protein content of multidrug transporters along the human small and large intestine as measured by real-time RT-PCR and LC-MS/MS.

Kim L. Brouwer (Chapel Hill, North Carolina, USA)

Zeruesenay Desta (Indianapolis, Indiana, USA)
Genetic and non-genetic mechanisms of interindividual variability in human drug disposition, drug interactions and effects: e.g. tamoxifen and efavirenz.

Matthias Schwab (Stuttgart)
Epigenetic regulation of drug transporters by DNA methylation.
16.00 - 18.00 (Ulrich Klotz, Bernhard Rauch)

Yurong Lai (Groton, Connecticut, USA)
Prediction of drug transport in man by in-vitro data.

Catherine M. Pastor (Geneva, Switzerland)
Hepatic drug transporters: Uptake carriers for MRI contrast agents.

Evan Kharasch (St. Louis, Missouri, USA)
Opioids, transporters, and the blood-brain barrier.

Jacques Turgeon (Montreal, Canada)
The role of cardiac CYP450s and drug transporters on drug-induced Long QT Syndrome.

19.00

Get together in the State Museum of Pomerania with guided tours to the art treasures of the University of Greifswald and the paintings of Caspar David Friedrich.
Friday, September 13th

Measures to evaluate the entry route of drugs in man (workshop I) 2 concurrent events
(Werner Weitschies, Jens-Peter Kühn)

09.00 - 10.00

Mirko Koziolek (Greifswald)
Functional imaging of gastric emptying.

Anja Paulick (Greifswald)
The fate of water in healthy subjects after drinking 240 ml and correlations with the absorption of acetaminophen and amoxicillin: results of a MRI and pharmacokinetic study.

Julia Kolbow (Greifswald)
Efficacy of opioid antagonists to prevent opioid induced constipation: Methods to evaluate changes in intestinal transit times in healthy subjects.

Dana Schönherr (Greifswald)
Intestinal microdialysis: An experimental challenge to measure local drug concentrations on the intestinal places of drug absorption.
10.00 - 11.00 Poster sessions (3 parallel sessions)

Session 1: Status seminar of the COM_DAT research group
(Andreas Foerster, Markus Keiser, Stefan Oswald)

Session 2: Pharmacology/Clinical Pharmacology
(Markus Grube, Karen Saljé)

Session 3: Pharmaceutical Technology & Biopharmacy
(Sandra Klein, Gunnar Glöckl)
Workshop I (2 concurrent events continued)

11.00 - 13.00

**Gunnar Glöckl (Greifswald)**
Colon models: How to simulate the complexity of the colonic microbiotic function.

**Henrike Bruckmüller (Kiel)**

**Mladen V. Tzvetkov (Göttingen)**
Role of OCT1 for hepatic uptake and metabolism of drugs: Clinical pharmacological evaluations using a pharmacogenomics approach.

**Jens-Peter Kühn (Greifswald)**
Magnetic resonance enhanced imaging by gadoxetate - a clinical measure for hepatic transporter function?

**Kim L. Brouwer (Chapel Hill, North Carolina, USA)**
$^{99m}$Tc-mebrofenin and $^{99m}$Tc-sestamibi: clinical probes to assess hepatobiliary transport.

**Grzegorz Bartosz (Łódź, Poland)**
Fluorescent markers in MDR research - friends or foes?

**Kathleen Klein (Greifswald)**
Pharmacogenomics of severe phenprocoumon associated gastrointestinal bleeding.
Drug transport in special compartments (workshop II)
2 concurrent events

(Heyo K. Kroemer, Stefan Oswald)

09.00 - 10.00

Carsten Ehrhardt (Dublin, Ireland)
Drug transporters in the blood-air barrier: implications for pulmonary drug delivery.

Sarah Berlin (Greifswald)
Intestinal and pulmonary transporters - meaning for absorption and pulmonary distribution of macrolide antibiotics in foals.

Henriette Meier zu Schwabeldissen (Basel, Switzerland)
Cardial drug transporters - designing of drug eluting stents.

10.00 - 11.00 Poster sessions (3 parallel sessions)

Session 1: Status seminar of the COM_DAT research group
(Andreas Foerster, Markus Keiser, Stefan Oswald)

Session 2: Pharmacology/Clinical Pharmacology
(Markus Grube, Karen Saljé)

Session 3: Pharmaceutical Technology & Biopharmacy
(Sandra Klein, Gunnar Glöckl)
Workshop II (2 concurrent events continued)

11.00 - 13.00

Fabian Müller (Erlangen)
Renal drug interactions with cation transporters (OCT2/MATE).

Sandra Bien-Möller (Greifswald)
Multidrug transporters in human brain and glioblastoma multiforme.

Markus Keiser (Greifswald)
Drug transporters in the human bladder - preconditions for vesical administration of bladder spasmolytic drugs.

Gabriele Jedlitschky (Greifswald)
Transporters and cell signalling: physiological functions and regulation of the ABC transporter MRP4 (ABCC4).

Bernhard Rauch (Greifswald)
Sphingosine-1-phosphate - a proinflammatory lipid released from platelets via MRP4 (ABCC4).

Jacques Turgeon (Montreal, Canada)
Transporter-based reasons for statine myotoxicity.

Karen Saljé (Greifswald)
Function of drug transporter in the human placenta barrier.
Poster sessions

Status seminar of the COM_DAT research group (session 1)

LC-MS/MS-based quantification of intestinal drug transporters and metabolizing enzymes. 
Gröer C, Balogh L, Lai Y, Heidecke CD, Siegmund W, Oswald S. 
1Department of Clinical Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany; 2Department of Pharmacokinetics, Dynamics and Metabolism, Pfizer Global Research and Development, Groton, CT, USA; 3Department of General, Visceral, Thoracic and Vascular Surgery, University Medicine Greifswald, Germany

Expression of clinically relevant transporters in the human placenta. 
Stückrad O, Saljé K, Siegmund W, Oswald S. Department of Clinical Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany

Expression, regulation and function of drug transporters in Caco-2 cells after incubation with prototypical nuclear receptor activators. 
Brück S, Strohmeier J, Gröer C, Siegmund W, Oswald S. Department of Clinical Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany

Affinity of the neuraminidase inhibitor oseltamivir to drug transport proteins. 
Otter M, Kluger L, Oswald S, Siegmund W, Keiser M. Department of Clinical Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany

Affinity of talinolol to intestinal transport proteins. 
Bexten M, Roustom T, Oswald S, Scheuch E, Keiser M, Siegmund W. Department of Clinical Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany
Pharmacokinetics and pulmonary distribution of clarithromycin after simultaneous and consecutive administration of rifampicin in foals.
Berlin S, Penski J, Spiekermann L, Venner M, Oswald S, Keiser M, Siegmund W. Department of Clinical Pharmacology, Center of Drug Absorption and Transport, University Medicine, Greifswald, Germany

Doxorubicin mediated up-regulation of Abca1 and Abcg1 in cardiomyocytes.
Monzel JV, Meyer zu Schwabedissen H, Budde T, Bien-Moeller S, Kroemer HK, Grube M. Department of Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany

Characterization of drug transporters in peripheral blood cells.
Hubeny A1, Triebel I1, Keiser M2, Kroemer HK1, Siegmund W2, Grube M1. 1Department of Pharmacology, 2Department of Clinical Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany

The fate of water in healthy subjects after drinking 240 ml and correlations with the absorption of acetaminophen and amoxicillin: results of a MRI and pharmacokinetic study.
Paulick A1, Modess C1, Oswald S1, Kühn JP2, Weitschies W3, Siegmund W1. 1Department of Clinical Pharmacology, 2Department of Radiology, University Medicine Greifswald, 3Department of Pharmacy, University of Greifswald, Germany

Simulation of microbial metabolic activity in the human proximal large intestine.
Glöckl G, Weitschies W. Department of Pharmaceutical Technology and Biopharmacy, Center of Drug Absorption and Transport, University of Greifswald, Germany

Development of a new microdialysis system for the determination of drug concentrations in the small intestine.
Schönherr D1, Hanke U2, Siegmund W3, Becker D4, Weitschies W1. 1Department of Pharmaceutical Technology and Biopharmacy, Center of Drug Absorption and Transport, University of Greifswald, Germany, 2LTS Lohmann Therapie-Systeme AG, Greifswald, 3Department of Clinical Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany, 4Vivo Drug Delivery GmbH, Wollerau, Switzerland
**Pharmacology/Clinical Pharmacology (session 2)**

Interaction of opioids with uptake transporters of the OATP family.

*Sieling T\(^1\), Kolbow J\(^2\), Engel A\(^1\), Wegner M\(^1\), Keiser M\(^2\), Siegmund W\(^2\), Meissner K\(^1\). \(^1\)Clinic of Anesthesiology and Intensive Care, \(^2\)Department of Clinical Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany

Mass spectrometry-based quantification of 4 beta-hydroxy-cholesterol and cholesterol in plasma to conclude on hepatic CYP3A4 activity.

*Hasan MN, Siegmund W, Oswald S. Department of Clinical Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany

Development and validation of a LC-MS/MS method for the quantification of paracetamol, diclofenac and prednisolone in dried blood spots after intramuscularly administration of two different formulations in rats.

*Scheuch E\(^1\), Probst M\(^2\), Kühn J\(^3\), Weitschies W\(^2\), Siegmund W\(^1\), Oswald S\(^1\). \(^1\)Department of Clinical Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, \(^2\)Department of Pharmacy, University of Greifswald, \(^3\)Department of Radiology, University Medicine Greifswald, Germany

Regulation of the ABC transporter MRP4 (ABCC4) by protein kinases and interaction with adaptor proteins.

*Bröderdorf S, Schaletzki Y, Ziems K, Kromrey ML, Kroemer HK, Jedlitschky G. Department of Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany*
Characterization of expression and localization of the transporter SLC35F1.

Mosyagin I1, Endlich N2, Müller M1, Hagen P1, Kotb A2, Rumpel E2, Vogelgesang S3, Kroemer HK1, Jedlitschky G1.
1Department of Pharmacology, Center of Drug Absorption and Transport, 2Department of Anatomy and Cell Biology, 3Department of Neuropathology, University Medicine Greifswald, Germany

Inhibition of Pim1 kinase results in decreased growth and enhanced apoptosis of glioblastoma cells.

Bien-Möller S1, Hildner M1, Herzog S1, Fink MA1, Friedel C2, Meyer zu Schwabedissen H1, Ritter CA3, Kroemer HK1, Schroeder HW2.
1Department of Pharmacology, Center of Drug Absorption and Transport, 2Department of Neurosurgery, University Medicine Greifswald, 3Department of Clinical Pharmacy, University of Greifswald, Germany

Up-regulation of Pim1 kinase in glioblastoma multiforme.

Herzog S1, Fink MA1, Friedel C2, Fritsch M3, Weitmann K3, Havemann C3, Meyer zu Schwabedissen H1, Ritter CA4, Hoffmann W3, Kroemer HK1, Schroeder HW2, Bien-Möller S1. 1Department of Pharmacology, Center of Drug Absorption and Transport, 2Department of Neurosurgery, 3Institute for Community Medicine, University Medicine Greifswald, 4Department of Clinical Pharmacy, University of Greifswald, Germany

Genetic and non-genetic risk factors as cause of serious adverse drug reactions using the example of severe gastrointestinal bleeding after NSAID application.

Klein K1, Salje K1, Teumer A2, Völker U3, Siegmund W1*. 1Department of Clinical Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, 2Department of Functional Genomics, University of Greifswald, Germany, *on behalf of the Network of Regional Pharmacovigilance Centers, Germany

Functional characterization of single nucleotide polymorphisms of the human solute carrier, SLC22A16.

Beggerow E, Begunk R, Meyer zu Schwabedissen H. Department of Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany
Expression and function of OATP1B3 in the human pancreas.

Steiner T, Böttcher K, Meyer zu Schwabedissen H. Department of Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany

Impact of the carnitine transporter OCTN2 on the development and characteristic of myocardial infarction.

Bonitz K, Schmidt K, Kroemer HK, Grube M. Department of Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany

The activated coagulation factor-X (FXa) induces mitogenesis and migration by regulation sphingosine kinase expression and activity in human vascular smooth muscle cells.

Böhm A, Flößer A, Grube M, Kroemer HK, Rauch BH. Department of Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany

Role of FoxO transcription factors in thrombin-mediated proliferation of vascular smooth muscle cells.

Mahajan S¹, Fender A², Schrör K², Hohlfeld T², Rauch BH¹. ¹Department of Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany, ²Institute for Pharmacology and Clinical Pharmacology, University Hospital Düsseldorf, Germany

The bioactive lipid sphingosine-1-phosphate enhances thrombin-induced migration of human monocytes via transcriptional up-regulation of the protease-activated receptor-4.

Alexandra Welz¹, Böhm A¹, Sostmann B², Rauch BH¹. ¹Department of Pharmacology, Center of Drug Absorption and Transport, University Medicine Greifswald, Germany, ²Institute for Pharmacology and Clinical Pharmacology, University Hospital Düsseldorf, Germany
Pharmaceutical Technology & Biopharmacy (session 3)

New in-vitro model for the investigation of drug distribution in the vitreous body.

Loch C, Bogdahn M, Stein S, Nagel S, Weitschies W, Seidlitz A.
Department of Pharmaceutical Technology and Biopharmacy, Center of Drug Absorption and Transport, University of Greifswald, Germany

Development of long-term stable gels for drug-eluting stent testing in the vFTC.

Semmling B¹, Nagel S¹, Seidlitz A¹, Brand T¹, Sternberg K², Weitschies W¹.
¹ Department of Pharmaceutical Technology and Biopharmacy, Center of Drug Absorption and Transport, University of Greifswald, ²Institute for Biomedical Engineering, University of Rostock, Germany

Development of a chewing gum to characterize chewing motions of patients.

Wilde L¹, Wollatz U¹, Kordaß B², Glöckl G¹, Weitschies W¹. ¹ Department of Pharmaceutical Technology and Biopharmacy, Center of Drug Absorption and Transport, University of Greifswald, Germany ²University Medicine Greifswald, Germany

Formulation and characterization of fast dissolving wafers containing fluorescein sodium for application on vaginal and intestinal mucosa.

Schulz K¹, Hanke U², Weitschies W¹. ¹ Department of Pharmaceutical Technology and Biopharmacy, Center of Drug Absorption and Transport, University of Greifswald, Germany, ²LTS Lohmann Therapie-Systeme AG, Greifswald, Germany
Estimating the gastroretentive potential of objects by application of a new in vitro antrum model.

Neumann W, Schneider F, Weitschies W. Department of Pharmaceutical Technology and Biopharmacy, Center of Drug Absorption and Transport, University of Greifswald, Germany

Large scale coating of stents via fluidized-bed technology.

Wentzlaff M, Seidlitz A, Senz V, Grabow N, Sternberg K, Weitschies W. 1Department of Pharmaceutical Technology and Biopharmacy, Center of Drug Absorption and Transport, University of Greifswald, Germany, 2Institute for Biomedical Engineering, University of Rostock, Germany

Evaluation of drug transfer from drug-coated balloons using a hydrogel-based in vitro setup.

Seidlitz A, Nagel S, Kotzan N, Reske T, Grabow N, Petersen S, Sternberg K, Weitschies W. 1Department of Pharmaceutical Technology and Biopharmacy, Center of Drug Absorption and Transport, University of Greifswald, Germany, 2Institute for Biomedical Engineering, University of Rostock, Germany

Potential reasons for the variability of oral ibuprofen pharmacokinetics in neonates – an in vitro study.

Kersten E, Klein S. Department of Pharmaceutical Technology and Biopharmacy, Center of Drug Absorption and Transport, University of Greifswald, Germany

Dynamic system for simulation of physiological pH gradients for hydrogen carbonate buffers (pHysiograd).

Garbacz G, Kołodziej B, Koziółek M, Weitschies W, Klein S. 1Physiolution GmbH, Greifswald, Germany, 2Institute of Low Temperature and Structure Research, Polish Academy of Sciences in Wroclaw, Poland, 3Department of Pharmaceutical Technology and Biopharmacy, Center of Drug Absorption and Transport, University of Greifswald, Germany
Guest Speakers and Chairmen

Prof. Dr. Grzegorz Bartosz  
Department of Molecular Biophysics  
University of Lodz, Poland

PD Dr. Kurt Bestehorn  
Pro Med Con GmbH, Ebenhausen

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Division of Pharmacotherapy and Experimental Therapeutic  
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Henrike Bruckmüller  
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Prof. Dr. Ingolf Cascorbi  
Institute of Clinical and Experimental Pharmacology  
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Prof. Dr. em. Ulrich Klotz
Dr. Margarete Fischer-Bosch-Institute of Clinical Pharmacology (IKP)
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