



1. Summer Semester 2015
2nd Scientific Retreat, Chiemsee
“Progress in Clinical Pharmacology”



Scientific Retreat

"Progress in Clinical Pharmacology"

Abtei Frauenwörth

Chiemsee, 4.6. - 6.6.2015



PROGRAM OVERVIEW

Thursday, June 4, 2015

Arrival of the participants from Stuttgart, Erlangen, Kiel, Greifswald

Dinner: 6 pm

Scientific Evening session: 19:30: After-Diner-Science

Afterwards: “**meet&greet**” in the catacombs

Friday, June 5, 2015

Breakfast: 8 am

Session 1: 8:50 – 10:10 am

Coffee break

Session 2: 10:25 – 11:45 am

Lunch: 12 am

Afternoon excursion to Herrenchiemsee

(Planned departure: 13:05, 13:55)

Latest return from Herreninsel: 16:40, 17:10 or 17:15!!!

Dinner: 6 pm

Afterwards “**meet&quiz**” in the catacombs

Saturday, June 6, 2015

Breakfast: 8 am

Session 3: 8:50 – 10:10 am

Coffee break

Session 4: 10:25 – 11:45 am

Lunch: 12 am

Departure

SCIENTIFIC PROGRAM

Thursday 4.6.2015

19:30 –21:00 pm

“After-Dinner-Science”

❖ **Uli Zanger (Stuttgart):**

Cutting-edge research on drug metabolizing enzymes

❖ **Markus Keiser (Uni Greifswald)**

Cellular Transportermodels: Status quo et quo vadis?

❖ **Jörg König (FAU Erlangen):**

Structure-Function relationships of OATPs - to learn from polymorphisms and mutagenesis

Afterwards: “**meet & greet**” in the catacombs

Methods in Clinical Pharmacology

Chairs: Stefan Oswald (Greifswald), Ute Hofmann (Stuttgart),

- ❖ **Diana Busch (Greifswald)** - Targeted proteomics: A promising method to characterize the expression and function of transporter proteins and metabolizing enzymes
- ❖ **Janina Johanning (Stuttgart)** - Simultaneous quantification of estrogenic tamoxifen metabolites and sex steroid hormones in human plasma via UHPLC-ESI-MS/MS
- ❖ **Patrick Leuthold (Stuttgart)** - Comprehensive metabolomic and lipidomic profiling of kidney tissue using liquid-chromatography quadrupole time-of-flight mass spectrometry
- ❖ **Paul Hagen (Greifswald)** - Investigation of the molecular conformation of OATP2B1 using FRET
- ❖ **Christina Hacker (Erlangen)** - Substrate-dependent inhibition of the human organic cation transporter OCT2: A comparison of metformin with experimental substrates
- ❖ **Ruwen Böhm (Kiel)** - Preliminary results of the clinical trial „genotype-phenotype correlation of drug-metabolizing enzymes“

Strategies in Tumortherapy

Chairs: Gabi Jedlitschky (Greifswald), Heike Horn (Stuttgart)

- ❖ **Simone Schächtele (Erlangen)** - "Implementation of Warnings From Dear Doctor Letters (Rote-Hand-Briefe)"
- ❖ **Dina Mönch (Stuttgart)** - Identification of potential target genes for the treatment of malignant mesothelioma
- ❖ **Lukas Klumpp (Stuttgart/Tübingen)** - The SDF-1/CXCR4 axis in glioblastoma as biomarker and potential therapeutic target for radiation therapy
- ❖ **Heiko Paland (Greifswald)** - Upregulation of the carnitine transporter OCTN2 is associated with a poor survival of patients with glioblastoma multiforme
- ❖ **Anna Reustle (Stuttgart)** - Characterizing the expression and interindividual variability of human breast cancer resistant protein (BCRP/ABCG2) in renal cell carcinoma
- ❖ **Corinna Mohr (Stuttgart/Tübingen)** - Calcium-activated potassium channels in tumour cell proliferation, predications on breast cancer risk and treatment outcome

Regulation and Drug Transporters

Chairs: Jörg König (Erlangen), Anne Nies (Stuttgart)

- ❖ **Gabi Jedlitschky (Greifswald)** - The role of protein-protein interactions in the regulation of MRP4
- ❖ **Henrike Bruckmüller (Kiel)** - site-specific miRNA Expression INFLUENCES / CONTROLS Transporter Protein Abundance along the HUMAN INTESTINE
- ❖ **Meike Kähler (Kiel)** - miR-212 & ABCG2: potential regulators of imatinib-sensitivity?
- ❖ **Claudia Neul (Stuttgart)** - Cellular Uptake of Sorafenib into Hepatocellular Carcinoma Cells Is Independent of Human Organic Cation Transporter 1 (OCT1)
- ❖ **Andrea Hubeny (Greifswald)** - OATP2B1 is involved in the antiphagocytic effect of resveratrol in macrophages
- ❖ **Sarah Berlin (Greifswald)** - The role of organic anion transporting polypeptides (OATPs) in the uptake of pulmonary relevant drugs - an approach to localization and transport characterization

Metabolism and Pharmacogenetics

Chairs: Martin Fromm (Erlangen), Kathrin Klein (Stuttgart)

- ❖ **Anja Kittel (Erlangen)** - Alanine-glyoxylate aminotransferase 2 (AGXT2) polymorphisms have considerable impact on methylarginine and β -aminoisobutyrate metabolism in healthy volunteers
- ❖ **Erkka Järvinen (Erlangen)** - Dog UDP-Glucuronosyltransferase Enzymes of Subfamily 1A: Cloning, Expression and Activity
- ❖ **Patrick Kröner (Stuttgart)** - Phase 2 metabolism of active hydroxyclofiphen metabolites
- ❖ **Judith Jeske (Stuttgart)** - SMPDL3A, a new PXR target gene, connecting PXR to inflammation control?
- ❖ **Roman Tremmel (Stuttgart)** - ADME-wide analysis of copy number variation using targeted exome resequencing and their functional relevance in human liver
- ❖ **Carolin Grafe (Erlangen)** - Analyses of potential drug-drug interactions of enzalutamide and abiraterone

anti-estrogenic interactions targeted
analysis function intracellular
metabolism glucuronidated recovered
organic improve CNVs influence metabolite detected
number investigated metabolites intestinal
association trans-3-hydroxyclofiphenol important genes
and/or radiation substrate information therapeutic
models isoforms L-carnitine median receptor addition
upregulated comprehensive
small applied found metformin
enzyme tissue uptake expression
recently protocol effects demonstrated respectively target
site-specific lipids UGT1As protein increased interaction acceptor
cells plasma different OATP1A other CYP2D
acid hepatic abiraterone AGXT whether GBM growth platelets
obtained novel still resistance signaling proteins samples
acts order antiphagocytotic considered estrogenic response Bear urine
miR ABCG new kidney Therefore cell data
show GABG ccRCC cohort compounds
type measured known about studies phase impact CYP3A
ATP activation SNPs extracellular SBMA clearance associated
UGT2B binding tissues limited macrophages CYP2E HEK more
enzymes CNV basis analyzed line assays levels ADME
primary either first substrates OCT showed only
liver in vitro role extraction CXCR KCA UGTs system Based
UGT PXR FRET dog N-oxide blood renal molecules
SNP further affect correlation intestine outcome
suggest active used transporter drug gene
most clinical potential trans-4-hydroxyclofiphenol ALK aim
TCGA HepG tumor functional human effect years genetic
miRNAs brain involved influenced approach
each common therapy significantly characterized molecular
medical inhibitors compared localization SMPDL3A total
healthy results interestingly transporters analyses under
ASP CYP2C investigate concentrations Moreover MPP
OATP1B studied glioblastoma concentrations mainly cellular
regulation development drug-drug respective cancer
identified OATP2B tamoxifen variants higher
Letters several experiments resveratrol OCTN UGT1A mass
lower survival significant using efflux
mRNA targets medication transport observed
inhibition glucuronidation indicate breast abundance
study sorafenib endogenous treatment
metabolic patients activity drugs

2. Winter Semester 2015 / 2016

Focus: Fundamental Concepts of Modern Clinical Pharmacology

21.10.2015, 10.15am	U. Zanger:	Introduction
	U. Klotz:	Introduction to Pharmacokinetics: Basic Principles and Clinical Applications part I
28.10.2015	U. Klotz:	Introduction to Pharmacokinetics: Basic Principles and Clinical Applications part II
04.11.2015, 10am	M. Coenen (Nijmegen):	Pharmacogenetics of inflammatory bowel disease and childhood cancer: from research to diagnostics
11.11.2015	U. Zanger:	Drug Metabolism and Drug Metabolizing Enzymes
18.11.2015	A. Nies:	Biochemistry & Pharmacology of Drug Transport
25.11.2015	O. Burk:	Regulation of Drug Metabolism & Transport, Nuclear Receptors
02.12.2015	U. Hofmann:	Analytical Concepts and Methods in Clinical Pharmacology
09.12.2015	K. Mörike (Tübingen):	Clinical Studies - Design and Realization
16.12.2015	S. Winter:	Statistical tests I: Basic Statistics
13.01.2016	U. Zanger:	Pharmacogenetics - Principles and Clinical Applications
20.01.2016	S. Winter:	Statistical tests II: Tests for Clinical Studies
27.01.2016	A. Nies:	Pharmacogenetics of Drug Transport
03.02.2016	U. Zanger:	Drug-Drug Interactions

3. Summer Semester 2016

Focus: Oncology, basic and clinical aspects

04.05.2016	W. Aulitzky:	Introduction - Basic and Clinical Aspects
11.05.2016	H. Brauch:	Genes and Cancer
18.05.2016	T. Mürdter:	Metabolism of Anti-Estrogens with a focus on Tamoxifen
25.05.2016	H. van der Kuip:	Cancer and Regulation of Cell Cycle
01.06.2016	H. Horn/C. Kalla:	Lymphomas and Leukemias
08.06.2016	E. Höring	Personalized Tumor Therapy
15.06.2016	W. Schroth:	Pharmacogenomics of Endocrine Breast Cancer Therapy
22.06.2016	M. Schwarz (Tübingen):	Mechanisms of tumor promotion
29.06.2016	G. Ott:	Tumor Pathology
06.07.2016	S. Winter:	Regression models
13.07.2016	M. Dengler (Melbourne, Australia):	Control of apoptosis by the Bcl-2 family: Molecular mechanisms and therapeutic potential
20.07.2016	R. Hoppe:	Epigenetics and Cancer



4. Winter Semester 2016 / 2017

Focus:

Molecular and cell-biology methodology and selected „soft-skills“ topics

19.10.2016	U. Zanger	The Human genome – introduction and overview
26.10.2016	C. Justenhoven	Analysis of DNA variations
02.11.2016	O. Burk	Transcriptional regulation
09.11.2016	K. Klein	RNA-World: function and analysis
23.11.2016	M. Ueffing (Tü)	Proteomics - From basic approaches to clinical applications
30.11.2016	H. van der Kuip	Flow cytometry and cellular imaging
07.12.2016	U. Zanger	Functional genomics I – RNAi and genome editing
14.12.2016	A. Nies	Functional genomics II – mouse technologies
21.12.2016	H.P. Rodemann (Tü) 11:15am	Soft Skills I: Good scientific practice
11.01.2017	S. Winter	Basic statistics for genome-wide analyses
18.01.2017	H. Brauch	Soft Skills II: How to write a scientific paper
25.01.2017	U. Zanger Postponed to SS 2017	Soft skills III: Science publishing business and science metrics

5. Summer Semester 2017

Focus:

Physiology and Pathophysiology of Organ Systems

10.05.2017	U. Zanger	Scientific publishing and metrics
17.05.2017	S. Winter	Work-flow for statistical analyses
24.05.2017	J. Albert (RBK)	Physiology and pathophysiology of the digestive system
31.05.2017	C. Schäfer (RBK)	Physiology and pathophysiology of the liver
07.06.2017	M. Schwab 9:00am	Physiological specialties in children
14.06.2017	G. Friedel (Schillerhöhe)	Physiology and pathophysiology of the lungs
21.06.2017	A. Hartkopf (UKT Frauenklinik)	Physiology and pathophysiology of the breast
28.06.2017	K. Rapp (RBK)	Physiological specialties in elderly patients
05.07.2017	P. Ong (RBK)	Physiology and pathophysiology of the cardiovascular system
12.07.2017	M. Kimmel (RBK)	Physiology and pathophysiology of the kidneys
19.07.2017	A. Nüssler (UKT)	Cell culture approaches towards 3D micro-organ engineering

6. Winter-Semester 2017/2018

Focus:

Selected Topics in Pharmacology and Toxicology

25.10.2017	Ryo Fujiwara	Role of UGTs for endogenous metabolic functions
08.11.2017	Klaus Mörike (Tübingen) 9am	Arzneimitteltherapie kardialer Arrhythmien
15.11.2017	Robert Lukowski (Tübingen)	The NO-cGMP system: Implications for disease biology and therapy
22.11.2017	Reinhold Kerb (Mannheim)	Drug Therapy of Diabetes, Obesity, Metabolic Syndrome
29.11.2017	Peter Münzel (Tübingen)	Gifte und Vergiftungen
06.12.2017	Anne Nies	Pharmakotherapie von Depression und Schizophrenie
13.12.2017	Robert Jütte (IGM Stuttgart)	Der Placebo Effekt: Past and Present
10.01.2018	Florian Büttner	Introduction to R
17.01.2018	Matthias Schwab	Immunosuppressive Drug Therapy
24.01.2018	Albert Braeuning (BfR Berlin)	Food Safety at the German Federal Institute for Risk Assessment
31.01.2018	Siarhei Kandabarau	MiniSeq - Applications, Expectations, Limitations
07.02.2018	Uli Zanger	Wrap-up Session