



Meeting report

The Swiss Society of Pharmacology and Toxicology (SSPT) is a roof society that includes the Swiss Society of Experimental Pharmacology (SSEP), the Swiss Society of Toxicology (SST), the Swiss Society of Clinical Pharmacology and Toxicology (SSCPT) and the Swiss Society of Pharmaceutical Medicine (SSPM). One of the goals of the society is to support and promote common interests in pharmacological and toxicological questions in Switzerland. While most of the activity is taking place in the individual member societies, the common scientific meetings provide the ideal platform to show our common interests and to build a strong community. Moreover it provides the opportunity great opportunity for our young members to exchange their experience and knowledge and to participate in the competition of the prestigious NIBR poster and young investigator awards. This year's meeting achieved without doubt this purpose. An outstanding scientific program, of interest to anybody in our community, was prepared by Dr. Michael Arand, Kaspar Vogt and Gabriele Weitz-Schmidt, and was appreciated by all participants. As the new president of the SSPT I would like to thank the organizers for the organization of this meeting. Importantly, such a meeting is only possible thanks to the generous financial support of our sponsors (KGF, EPHAR, British Society of Pharmacology, NIBR). Finally I would like to announce the date of the next SSPT spring meeting, which will take place in 2012:

SSPT spring meeting 2012, April 19, 2012, in Bern

SSEP Symposium: Innovative Approaches in Experimental Pharmacology: Opportunities and Challenges (organized by Dr. Gabriele Weitz-Schmidt, University of Basel)

The SSEP symposium was opened by **Dr. Monica Campillos** from the Helmholtz Center in Munich, who talked about drug target identifications exploring known side effects. Dr. Campillos impressively demonstrated that it is possible to use phenotypic side-effect similarities to infer whether two drugs share a target. With the example of rabeprazole, an antiulcer proton pump inhibitor, it was nicely demonstrated that it is possible to predict and validate novel nervous system targets (i.e. dopamine receptor DRD3, and the serotonin receptor HTR1D). Then, **Dr. Gisbert Schneider** from the ETH, introduced the audience to computer-based *de novo* design methods in drug discovery. Using the program DOGS - Design Of Genuine Structures - Dr. Schneider demonstrated that fragments of active molecules can be 'shifted' to design novel compound structures. Further, **Dr. Ulrich Hommel** from the Novartis Institutes of BioMedical Research, Basel, gave a comprehensive overview on novel approaches in structure-based drug discovery, at the example of protease inhibitors. **Dr. Markus Rudin**, from the ETH/University Zürich familiarized the public with the possibilities to carry out multimodal imaging to study molecular mechanisms *in vivo*. Thereby he demonstrated that it is possible to monitor HIF-1 α expression in a

tumor using non-invasive fluorescence molecular tomography and to assess downstream events, such as the induction of VEGF. Such imaging methods allow monitoring and characterizing of certain tumors. Finally, **Dr. Patrick Hunziker** from the University of Basel provided a nice overview on the state of Nanomedicine in pharmacological applications.

SST Symposium:

(organized by Dr. M. Arand, Past-President SSPT)

The SST Symposium was opened by a very fundamental presentation of **Dr. Dr. Denis Hochstrasser** (Genetics and Clinical Laboratory Medicine, University of Geneva) on the topic of 'Clinical Toxicology and Mass Spectrometry' highlighting the dramatic progress in the clinical evaluation of patients' serum chemistry in critical intoxication cases. In the subsequent presentation, **Dr. Martin Traebert** from the Safety Pharmacology Department of Novartis) could demonstrate that the use of human embryonic stem cells is a powerful tool to predict arrhythmia in drug development. **Dr. Helmut Segner** (Animal Pathology, University of Bern) introduced the audience to the bioaccumulation of xenobiotics in fish and emphasized the usefulness of prediction from in vitro metabolism data. A comprehensive overview on the role of reactive metabolite assessment in drug discovery and early development as integral part of drug safety was provided by **Dr. Axel Paehler** (Drug Metabolism, Non-Clinical Safety Roche). Finally, the audience was offered an exciting insight in the latest trends of drug misuse by **Dr. Dr. Thomas Krämer** (Legal Medicine, University of Zurich) by his lecture: "From Room Odorizers, Plant Food and Bath Salts - New Designer Drugs on The Rise".

SSCPT/SSPM Joint Symposium:

The participants of the SSCPT/SSPM Joint Symposium were welcomed by **Dr. Martin Traber**, Vice-President of the SSPM and Secretary of the SSCPT. The goal of the joint meeting was to compare strategies and cover common topics. The first talk was held by **Dr. Beat Althaus** (SSPM, Head of Postgraduate Training Center of the Clinical Trial Center of the University Hospital Zurich) about the mission, vision and values of the Swiss Society of Pharmaceutical Medicine. The corresponding lecture was held by **Dr. Hugo Kupferschmidt** (President of the Swiss Society of Clinical Pharmacology and Toxicology, director of the Swiss Toxicological Information Centre). An important common topic of the two societies is drug safety. **Dr. Katharina Hartmann** (Küsnacht ZH) covered the issue from an pharmaceutical industry point of view, and **Dr. Thierry Buclin** (CHUV, Lausanne) from a university hospital and clinical point of view. **Dr. Martin Traber** closed the meeting with a moderated discussion round, where common and divergent views became apparent.

Plenary symposium: Potassium Channels – Role in Pharmacology & Toxicology (organized by Dr. Kaspar Vogt, University of Basel)

To suit the broad audience of the plenary symposium the talks were arranged to span the range from the molecular pharmacology to the clinical setting.

Dr. Kelly Tan from the University of Geneva opened the session by a talk demonstrating how Metamphetamine, a drug prone to drug-abuse drives adaptive changes in GIRK/Kir3 signaling. This is the first demonstration of a drug of abuse affecting GIRK signaling. Dr. Tan showed that these channels are crucially involved in regulating the excitability of GABAergic neurons in a region crucial for mediating the physiological effects of addictive drugs. Then **Dr. Sabina Kupersmidt** from Nashville talked about the interaction and the role of KCRI on the stimulation of HERG channels in the heart. HERG interaction is a major reason for adverse drug effects and their potentially fatal nature prevents a significant number of potential drugs to reach the marketplace. As a novel strategy Dr. Kupersmidt successfully screened for compounds, which can prevent the

interaction of HERG ligands with the channel, thus potentially alleviating a significant toxicological threat. **Dr. Peter Ruth** (Tubingen) summarized the vital role of BK and IK type Ca^{2+} -activated K^+ channels in different organs and physiological systems. Especially in the cerebellum, the role of these channels in maintaining the proper function of the loop between inferior olive, Purkinje cell and deep cerebellar nuclei was elegantly demonstrated by using cell-type specific genetic ablation. Finally, **Dr. Jürg Kesselring** from Valens, Switzerland, provided the audience with an overview of mobility impairment in multiple sclerosis (MS), and summarized the mechanisms of the pathophysiology and the treatment. The well-known temperature-sensitivity of the effects of MS lesions can be used to both treat the patients with innovative devices and try to elucidate potential pharmacological targets that improve the conduction safety factor.

Poster session

At the poster session, 28 posters were presented, representing the ongoing research from the Universities of Zurich, Bern, Basel, Lausanne and Geneva. The topics of the posters were wide, representing the many aspects that are covered by research areas in the Departments of Pharmacology and/or Toxicology in Switzerland. The poster presentations were evaluated by a comity including Dr. H.-U. Simon, Dr. K. Vogt and Dr. G. Weitz in view of the poster price to be distributed for the best poster presentation (see below). Consequently, the presenters made strong efforts to present their work in best light possible.

Oral contributions from Young Society Members

Three abstracts have been chosen by the Meeting organizers for oral contribution. First, Dagmara Lagnaz from the University of Lausanne reported her findings about the regulation of the thiazide-sensitive Na^+ , Cl^- -cotransporter by aldosterone and the ubiquitin-protein ligase Nedd4-2. Then, Dipak Maskey from the University of Bern presented a talk about the possible role of Atg5 in cancer drug-induced mitotic catastrophe and finally Gonzalo Yevenes talked about the molecular basis for the allosteric regulation of Glycine receptors by endocannabinoids. As for the poster presentations the Jury mentioned above decided about the best contribution from a young society member (see below).

Bürgi Prize Lecture and Award Ceremony

The Bürgi prize is given biennially for excellent scientific work within the field of or related to Pharmacology that was generated by a PhD student in Switzerland. Bürgi served as director of the Institute of Pharmacology of the University of Bern from 1906-1942. In 1931, his friends generated the "Bürgi fonds", which was thought to recognize scientific contributions within the field of Pharmacology with prizes. This year, the prize committee received three excellent applications. The prize committee consisted of the following individuals: Dr. H.U. Zeilhofer (Zurich), Dr. O. Staub (Lausanne), and H.-U. Simon (Bern). Dr. Nicola Andina (former PhD-student of the Institute of Pharmacology) was selected for the 2011 Bürgi prize for his scientific contributions during his PhD study in Bern. He identified new molecules that regulate apoptosis in neutrophils and eosinophils under inflammatory conditions that could represent attractive new drug targets. Dr. Andina summarized his findings within an excellent short talk.

NIBR Poster Award Ceremony

The following poster presentation was awarded a poster price:

Amrita Madhusudan, Jana Doehner, Karin Breu, Carsten Reither, Manfred Schedlowski, Irene Knuesel. Institute of Pharmacology and Toxicology, University of Zurich. Prenatal PolyI:C exposure causes accelerated aging and Alzheimer-like pathology in WT mice.

Awarded with 500.- CHF

The best Young Society Member presentation was awarded to:

Dagmara Lagnaz, Juan-Pablo Arroyo, Caroline Ronzaud, Gerardo Gamba and Olivier Staub,
Department of Pharmacology & Toxicology, University of Lausanne
The renal Na⁺,Cl⁻-cotransporter is regulated by the aldosterone-Sgk1-Nedd4-2 pathway.
Awarded with 1000.- CHF

EPHAR Keynote lecture

To promote European Pharmacology the EPHAR (The Federation of European Pharmacological Societies) and the British Pharmacological Society regularly support lectures covering outstanding research in the area of pharmacology. The EPHAR lecture of the SSPT Spring Meeting was given by Dr. Daniel Sinneker from the Technical University Munich (group Dr. Karl-Ludwig Laugwitz). In a very clear and impressive presentation Dr. Sinneker described the development of cellular models of cardiac disease using patient-specific stem cells. He mainly focussed on a model for long-QT Syndrome. Pluripotent stem cells from patients' skin cells were generated and differentiated into cardiomyocytes. These patient-derived cells recapitulated the electrophysiological features of the disorder and responded to pharmacologic manipulation. The work of Dr. Sinneker demonstrates that development of cellular models of disease genetically matched to specific patients is possible and that these models can be used to get more insights into the pathophysiology of diseases. Moreover, such models may provide a human context for validating therapeutic targets, and examining the response to pharmacologic interventions.

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- EPHAR
- British Society of Pharmacology

Lausanne, May 6, 2011

A handwritten signature in black ink, appearing to read "O. Staub".

Dr. Olivier Staub
SSPT and SSEP president
In the name of the SSPT board and the Meeting Organizers