

# Pharmacology International

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## WorldPharma2010

16th **World** Congress on Basic and Clinical **Pharmacology**

17 - 23 July **2010** in Copenhagen, Denmark

This issue of *Pharmacology International* is devoted to the 16<sup>th</sup> World Congress on Basic and Clinical Pharmacology, which will be held on the 17<sup>th</sup> - 23<sup>rd</sup> of July 2010 in Copenhagen, Denmark. The congress is hosted by the Danish Society for Pharmacology jointly with the British Pharmacological Society.

As you will see when exploring the program ([www.WorldPharma2010.org](http://www.WorldPharma2010.org))

WorldPharma2010 is a cornucopia of exciting scientific events. Most notable is the fact that for the first time in the history of pharmacology World Congresses there will be a unified coverage of both basic and clinical pharmacology to highlight the translational nature of the discipline.

WorldPharma2010 is organized to present material in support of the development of new chemical entities for unmet medical needs, and to promote rational pharmacotherapy. Every effort has been made to assemble the best possible program demonstrating that pharmacology is the quintessential translational science in that research in the field is critical for bridging the gap between animal and human studies of new therapeutics. More than 400 internationally acclaimed scientists from over 30 countries have been invited to make presentations during the meeting. This group includes three of the most prolific and highly cited pharmacologists in the world: Salvador Moncada, Frank J. Gonzalez and Paul M. Vanhoutte. The program consists of 25 plenary lectures, 18 focused conferences, and more than 20 workshops, satellites, and sponsored symposia. Each focused conference targets a specific contemporary topic in pharmacology over a 2 - 3 day period. The focused conferences, another unique aspect of this meeting, are designed to attract the leading scientists in specialized areas to foster informative discussion and debate on current findings and future directions in the field. WorldPharma2010 is being held in the same new congress centre ([www.WorldPharma2010.org/information.php](http://www.WorldPharma2010.org/information.php)) where the International Olympic Committee meeting was held in October, 2009 and where the United Nations Climate Change Conference will be held in December, 2009. Thus, the meeting location, like the scientific program, is world class.

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*Bridging Basic and Clinical Pharmacology*

**Abstract Submission Deadline: 15 January 2010**

**Early Registration Deadline: 15 March 2010**



*Continued from page 1...*

The capital of Denmark, Copenhagen is the home to nearly 2,000,000 inhabitants, making it the largest city in the country. Officially established in 1167 AD, the history of Denmark can be traced through the streets of Copenhagen. For over 600 years the Danish capital city has, first and foremost, been the home of the royal family, the seat of government, and the home base of its naval fleet. Buildings constructed in Copenhagen to help the power brokers maintain control over the centuries are still standing side by side with the buildings constructed more recently to house the chambers of democracy. This architecture illustrates the shift in the balance of power in Denmark over the past millennium.

Central Copenhagen is packed with historical sites, fine restaurants and entertainment venues. Using only the best produce, fish, and meats, top chefs and other food artists have developed a new category of dining in the Copenhagen restaurant environment.

Photo opportunities and tourist sights abound in Copenhagen. Shops selling and displaying goods from around the world are concentrated along Langelinie. Other popular attractions open during WorldPharma2010 include the famous Tivoli Gardens, the zoo, the royal castles, and the Ny Carlsberg Glyptotek sculpture museum.

Splash! Did I just see a man jump into the harbour? Yes, that's certainly possible. Diving, belly flops, and swimming for exercise, together with canal boat tours and consuming draught beer in Nyhavn, are a large part of the harbor life in Copenhagen during summer. As the water in Copenhagen Harbor is remarkably clean, two harbor baths make it possible to enjoy a refreshing swim. The harbor bath at Islands Brygge has five pools, two of which are reserved for children. There is room for 600 bathing guests in total. The harbor bath at Fisketorvet has three pools – one for children, one for exercise, and one for diving. There is room for 300 bathing guests at this site. The harbor baths are open every day in June, July, and August.



The Islands Brygge Harbour Bath (photo courtesy <http://www.kk.dk>)

Copenhagen is one of the world's greenest cities. Efforts continue to ensure that Copenhagen is the world's environmental capital. These include programs to reduce significantly CO<sub>2</sub> emissions, air pollution and noise, as well as those to create more green spaces, to emphasize organic food, and to encourage the use of bikes for transportation. Indeed, the visionary nature of these programs is illustrated by the fact that new bicycle paths in New York City are called Copenhagen Lanes and that politicians in Melbourne, Australia talk about "Copenhagenizing" their city when discussing programs to encourage bicycles as transportation. The international connection between Copenhagen and cycling is understandable in that during the morning rush-hour, one will typically see the minister, the doctor and the businessman with his briefcase, cycle side by side with the carpenter, the musician and the father with his children seated in the front of his carrier bicycle. Copenhagen has 307 kilometers of cycling lanes, making it one of the most bicycle-friendly cities in the world. The Øresund coast is an attractive area about 50 kilometers long that stretches from the city limits of Copenhagen through a large, green area with many homes

*Continued on page 3...*

along Strandvejen. Strandvejen is a 400-year old coastal road that connects Copenhagen to Helsingør. The area is one of Denmark's most fashionable and popular home sites, given the natural beauty of the surroundings, and the opportunities for outdoor activities with the wind in your hair and the scent of forest and saltwater. There is no other experience like cycling North Zealand during the summer. While the distance from Østerbro to Helsingør is about 60 km, the tour can be undertaken in smaller sections. Most of the route is along Øresund. The cycle route begins on Østerbrogade and goes north along Strandvejen. Following Strandvejen along the coast through Hellerup, Charlottenlund, Skovshoved, Klampenborg, Taarbæk, Skodsborg, Rungsted, Nivå, Humlebæk, Espergærde, and Snekkersten, you end in Helsingør. Along the way there are many shopping opportunities in Hellerup, Dyrehaven (deer park) in Klampenborg, as well as the Karen Blixen Museum in Rungsted, the painting collection Nivågård in Nivå, the Louisiana Museum of Modern Art in Humlebæk, the Flyderupgård Museum with an exhibition of fishing and farming from earlier times in Espergærde, and the castle, Kronborg, in Helsingør.

The fishing village, Gilleleje, is one of the most popular attractions on the Kattegat coast. Established more than 500 years ago by herring fishermen, Gilleleje remains an active fishing village. White, sandy beaches and crystal-clear sea water, proximity to forests with winding footpaths and old fisherman homes with pink climbing roses spread over the white picket fences all characterize Gilleleje. For more than 100 years, the Hornbæk region has been one of the preferred holiday locations in Denmark.



Gilleleje inner harbour (photo courtesy <http://en.wikipedia.org/wiki/Gilleleje>)

All in all, Copenhagen and its environs offer many unforgettable experiences. We look forward to welcoming all of you to Copenhagen and WorldPharma2010 next summer! •

Kim Brøsen  
President

Michael J. Mulvany  
Secretary General

### **IMPORTANT DATES TO REMEMBER:**

The deadline for uploading **abstract submissions** at [www.WorldPharma2010.org/abstracts.php](http://www.WorldPharma2010.org/abstracts.php) is **15 January 2010**.

**Meeting registration and hotel bookings** should be made at [www.WorldPharma2010.org/hotel.php](http://www.WorldPharma2010.org/hotel.php) before **15 March 2010**.

#### Host Organisations

### Danish Society for **Pharmacology**

*The Danish Society for Pharmacology comprises the five Danish pharmacological societies:*

- ☐ Danish Society of Pharmacology and Toxicology
- ☐ Danish Society of Clinical Pharmacology
- ☐ Danish Society of Pharmaco-epidemiology
- ☐ Danish Society of Clinical Chemical Pharmacology
- ☐ Pharmaceutical Society of Denmark

#### Jointly with



**BRITISH  
PHARMACOLOGICAL  
SOCIETY**

### **THE CONGRESS VENUE**



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Prof. Helena Rašková, M.D., D.Sc.  
Czech Republic

30 June 2009

I would like to send my greetings and congratulations to the upcoming 2010 World Congress of Basic and Clinical Pharmacology (WorldPharma2010) along with some of my recollections of past IUPHAR activities.

As one of the last remaining witnesses of the Second World Congress of Physiology, which took place in Denmark after the Second World War, I would like to record for posterity some of the past events of importance to the Union. My apologies for any oversights or errors which may result from my advanced age and complete blindness. WorldPharma2010 is concrete evidence of the unbelievable progress made, not only by the discipline of pharmacology, but also of toxicology. The existence of the International Union of Toxicology (IUTOX) also proves this point.

I would like to begin by describing the events in Denmark in 1950. While at that time pharmacology was not included in the program of physiologists, the Scandinavian Society of Pharmacology organized a one-day meeting in the student union building on 19 August 1950, which was very well-attended. Photographs of this meeting exist. F. Lembeck, a very young pharmacologist from Austria, was in attendance and later helped Professor Muscholl identify some of those present. Perhaps Muscholl, a perfect archivist, has some of the original photographs. The meeting was devoted to sympathomimetic and sympatholytic agents. Strong demands were voiced for better representation of pharmacology as a discipline at international congresses. Congress organizers had the excellent idea of undertaking an excursion by rail, with exchanges between participants facilitated by microphones between individual rail carriages. The next World Physiology Congress was scheduled for Canada. In fact, Professor Melville, who announced the decision, was chairman of the Department of Pharmacology in Montreal. Melville went on to promise that pharmacology would be given due attention. An informal committee was formed to lay the groundwork for the establishment of an international pharmacological body. The following members were elected: J.H. Burn (United Kingdom), D. Bovet (Italy), C. Heymans

(Belgium), G. Liljestrand (Sweden), K. Moller (Denmark), E. Rothlin (Switzerland), C.F. Schmidt (USA), and H. Weese (FRGermany). As promised by Dr. Melville, pharmacology was given prominence at the next congress. Unfortunately, I was not in attendance because I was not permitted by the Czechoslovak Communist authorities to travel to Canada because I was suspected of having undesirable contacts with the West. The next physiology congress took place in Belgium in 1956. Professor Heymans (before he was awarded the Nobel Prize) was active in promoting both physiology and pharmacology. The world of pharmacology owes very much to B. Uvnäs, who organized the first World Congress of Pharmacology in 1961 in Sweden. Together, Professor Uvnäs and I witnessed fantastic progress in science.



"Old pharmacologists" H. Rašková and B. Uvnäs at the 10th IUPHAR meeting, Sydney, Australia, 1987. The dedication is from Professor Rand.

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Because at that time we Czechoslovaks had quite an active group of young pharmacologists, we put forth what many considered a mad proposal, namely hosting the next congress in Prague. The level of bureaucracy and lobbying of the authorities necessary to secure permission for the younger pharmacologists to travel to Sweden would be unbelievable to those who did not experience it first-hand. Then came the construction of the Berlin Wall. Fortunately, we Czechoslovaks still managed to come to Sweden. As the site of the next congress was to be decided during the General Assembly in Sweden, we learned quickly the meaning of Western-style lobbying. We promised that if Prague was awarded the meeting, it would be organized in proper Western style, including provision of the necessary facilities. After all, if the meeting would leave participants with a good impression, we hoped it would help open the Iron Curtain and provide over the long-term some desperately needed Western scientific contacts for our young people. The unbelievable came true. Prague was chosen as the venue for the next meeting despite the recommendation of an American member that the next congress take place anywhere other than an Eastern-Block country. In the end, we worked hard to live up to what we promised. One of the highlights of the congress in Prague was captured photographically (at right). After the meeting, scientific cooperation between Czechoslovakia and the Western world grew. The Soviet invasion of Czechoslovakia in 1968 halted these developments for the next twenty years until the fall of Communism.



During the 2nd International Meeting of Pharmacology, Prague 1963: Honorary Doctorates of Medicine from Charles University were awarded to Professor Carl Smith (Philadelphia, USA), Professor Daniele Bovet (Nobel Prize 1957, Rome, Italy) and Professor Sergei V. Anichkov (St. Petersburg, Russia). In the photograph, Professor Bovet (first from the left), Professor Anichkov (third from the left) and Professor Rašková (fourth from the left) are shown.

It is my sincere hope that your meeting succeeds in disseminating the results of recent research and continues the ideals set forth over 50 years ago. Science must serve all of mankind. This must be the credo of all scientists, as we strive for the betterment of all humans, plants, and animals.



Traditionally the president of the past IUPHAR congress made a presentation to the president of the upcoming meeting. This photograph records that event during the 1961 meeting in Stockholm. The engraving on the box with the box reads "TO PROFESSOR HELENA RAŠKOVÁ PRESIDENT OF THE SECOND INTERNATIONAL PHARMACOLOGICAL MEETING IN PRAGUE 1963 FROM BÖRJE UVNÄS PRESIDENT OF THE FIRST INTERNATIONAL PHARMACOLOGICAL MEETING IN STOCKHOLM 1961".

Kindest regards,

*Helena Rašková*

Helena Rašková  
Czech Republic  
IUPHAR Secretary-General 1969-1972  
IUPHAR Vice President 1966-1969  
(Edited for English by S.J. Enna)

# Bridging Basic and Clinical Pharmacology in Copenhagen

## Invitation

It is our pleasure to present the programme for the 16th World Congress on Basic and Clinical Pharmacology, WorldPharma2010, to be held in Copenhagen 17–23 July 2010.

For this IUPHAR congress, basic and clinical pharmacology, kept separate for too long, have come together again for a remarriage to encompass the whole process of drug development from molecular biology to clinical practice. Here, the world's basic and clinical pharmacologists and all those dealing with the development and use of drugs will meet to discuss how we can work together to accommodate the need for safe and effective medicines at affordable prices.

As will be seen from the programme, WorldPharma2010 provides in-depth treatment of the hottest topics in basic and clinical pharmacology, while at the same time offering the broad perspective of how drugs affect the living organism, which is the foundation of our subject.

The programme is based on 18 two–three day focused conferences with a slate of top-level speakers throughout. In addition, the programme offers world-class plenary lectures, as well as a range of workshops and sponsored symposia. There is a wide range of possibilities for involvement of young investigators and investigators from developing countries.



The programme thus provides a unique opportunity for the world's pharmacologists to meet for what is promised to be a scientifically excellent programme as well as the opportunity to savour the atmosphere of Copenhagen.



**Kim Brøsen**  
*President*



**Michael J Mulvany**  
*Secretary General*

**Please periodically check [www.WorldPharma2010.org](http://www.WorldPharma2010.org) since the programme offerings will continue to change.**

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## **ABSTRACT SUBMISSION**

### ***DEADLINE 15 JANUARY 2010***

Abstracts will be grouped according to the topic of the focused conferences (see pages 10 - 18 of this publication). There will be a general group (Group G) for those abstracts not covered by the focused conferences.

Type one paragraph. Provide an Introduction, Materials/Patients, Results and Conclusion. Any references should be embedded in the text with format: (Other AB et al, journal year; vol: pp-pp). **Maximum allowed 250 words.**

Abstracts should conform to the following requirements:

- a) The abstract should be typed within the box on the template provided on-line then copied and pasted into the Abstract text box.
- b) The format indicated in the template should be followed. Note in particular:
  1. The abstract should be in English.
  2. Only the first letter in the title and proper names should be in upper case.
  3. Type using the whole width and the whole height of the box. Do not include any blank lines, do not give subheadings in the text. Do not include tables or figures. Do not underline, italicize or embolden any word.
  4. Use "Times Roman 12", *i.e.*, 12 point, single line (2 lines per cm) spacing. Follow on-line instructions concerning symbols and sub- and superscripts.

**When you are ready to submit then visit**

**<http://www.WorldPharma2010.org/abstracts.php>**



# OPENING LECTURE

Sunday 18 July

17:30

OL Found in translation: Human pharmacology comes of age  
Jeffrey K Aronson (UK)

## PLENARY LECTURES

Monday 19 July

08:30

PL01 **Vascular endothelium: Physiology, pharmacology and vascular disease**  
Salvador Moncada (UK)

PL02 **Biologics and good clinical practice in the European Union**  
Klaus Cichutek (Germany)

PL03 **Pharmacological control of central serotonin neurons**  
Trevor Sharp (UK)

17:30

PL04 **The challenges of the pharmaceutical industry in the 21st century**  
Emmanuel Canet (France)

PL05 **Cell therapy**  
Stephanie Dimmeler (Germany)

PL06 **The complex effects of 5-hydroxytryptamine in the cardiovascular system**  
Carlos Villalón (Mexico)

Tuesday 20 July

08:30

PL07 **Personalized medicine beyond pharmacogenetics (EACPT lecture)**  
Matthias Schwab (Germany)

PL08 **The Health Impact Fund**  
Thomas Pogge (USA)

PL09 **Antioxidants and free radicals, good or bad?**  
Barry Halliwell (Singapore)

Wednesday 21 July

08:30

PL10 **Structure and function of the GPCR (ASPET Lecture)**  
Brian Kobilka (USA)

PL11 **Calcium and cell functions**  
Masamitsu Iino (Japan)

PL12 **Meeting the challenge of antibiotic resistance**  
Otto Cars (Sweden)

17:30

PL13 **Headache**  
Jes Olesen (Denmark)

PL14 **Toll-like receptor and innate immunity**  
Shizuo Akira (Japan)

PL15 **Estrogen actions in the cardiovascular system**  
Sue P Duckles (USA)

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# PLENARY LECTURES (continued)

## Thursday 22 July

- 08:30** PL16 **Drug metabolism – past, present and future**  
Olavi Pelkonen (Finland)
- PL17 **Therapeutic potential of vaccines in the management of hypertension**  
Morris J Brown (UK)
- PL18 **Innovation in bioscience and pharmacology education**  
Ian E Hughes (UK)
- 17:30** PL19 **Reversal of corticosteroid resistance in severe inflammatory diseases: A novel therapeutic strategy**  
Peter J Barnes (UK)
- PL20 **EPHAR plenary lecture**  
Thomas Lönngren (Sweden)
- PL21 **Role of the renin-angiotensin system in vascular inflammation**  
Ernesto Schiffrin (Canada)

## Friday 23 July

- 08:30** PL22 **New strategies for stroke prevention**  
Ding-Feng Su (PR China)
- PL23 **Clinical pharmacology of Alzheimer's disease**  
Jean Marc Orgogozo (France)
- PL24 **Pharmacology of organic nitrates: From 19th century homeopathy to genetic mouse models**  
Bernd Mayer (Austria)

# IUPHAR 50TH ANNIVERSARY LECTURE

## Tuesday 20 July

- 17:30** IUL **Regenerate to be old**  
Paul M. Vanhoutte (Hong Kong)

# SOCIAL PROGRAMMES

## **Sunday 18 July Opening reception at the congress venue**

Attendance is free, but enrollment is required when you register.

## **Monday 19 July Reception at Copenhagen City Hall**

Attendance is free, but enrollment is required when you register.

Space is limited, so it is on a first come first served basis.

## **Wednesday 21 July Congress dinner at the Tivoli Gardens**

Choose between a casual dinner or a gourmet dinner. Tickets must be purchased in advance.

Visit [www.WorldPharma2010.org/information.php](http://www.WorldPharma2010.org/information.php) for more details.

# FOCUSED CONFERENCES

## FC01 **Clinical pharmacology in the emerging countries** Leader: Lembit Rägo (Switzerland)

### **Session 1 Clinical pharmacology and promotion of rational use of medicines in emerging and developing countries**

Chair: Suzanne R Hill (Switzerland)

Speakers: Andrew Walubo (South Africa) Folke Sjöqvist (Sweden) Simon RJ Maxwell (UK) Andrew Lofts Gray (South Africa)

### **Session 2 Clinical pharmacology and drug regulation in resource limited settings**

Chair: Alar Irs (Estonia)

Speakers: Alar Irs (Estonia) Krisantha Weerasuriya (Sri Lanka) Vera Vlahovic-Palcevski (Croatia) Victor Zarate (Chile)

### **Session 3 Clinical trials in countries with developing and emerging economies**

Chair: Lembit Rägo (Switzerland)

Speakers: Yang-Tong Foo (Singapore) Juntra Karbwang-Laothavorn (Switzerland) Kwablah Awadzi (Ghana) Davina Gherzi (Switzerland)

### **Session 4 Pharmacovigilance in emerging and developing countries: a luxury or a must?**

Chair: Ambrose O Isah (Nigeria)

Speakers: Murilo Freitas Dias (Brazil) Lembit Rägo (Switzerland)

## FC02 **Transmembrane transport: Perspectives for disease and drug discovery** Leaders: Randy Blakely (USA) & Richard B Kim (Canada)

### **Session 1 Molecular structure and pharmacology of membrane transporters**

Chairs: Ulrik Gether (Denmark) & Jonathan A Javitch (USA)

Speakers: Ulrik Gether (Denmark) Jonathan A Javitch (USA) Michael M Gottesman (USA) Hendrik van Veen (UK)

### **Session 2 Membrane transporters and disease**

Chairs: Søren Nielsen (Denmark) & Heidrun Potschka (Germany)

Speakers: Robert Tampe (Germany) Søren Nielsen (Denmark) Heidrun Potschka (Germany) Robert H Edwards (USA)

### **Session 3 Intestinal and hepatic transporters**

Chairs: Richard B Kim (Canada) & Martin F Fromm (Germany)

Speakers: Richard B Kim (Canada) Martin F Fromm (Germany) Hannelore Daniel (Germany) Stefan Bröer (Australia)

### **Session 4 Membrane transporters: molecular genetics and pharmacogenetics**

Chairs: Randy Blakely (USA) & Ingolf Cascorbi (Germany)

Speakers: Randy Blakely (USA) Toshiyuki Sakaeda (Japan) (TBC) Ingolf Cascorbi (Germany) Gerd Kullak-Ublick (Switzerland)

# FOCUSED CONFERENCES (continued)

## FC03 **Ion channels in analgesia and anaesthesia** Leaders: Clifford J Wolf (USA) & Nicholas Franks (UK)

### **Session 1** Ion channel drug targets in the sensory nerve

Chairs: Peter McNaughton (UK) & Stephen G Waxman (USA)

Speakers: Peter McNaughton (UK) Stephen G Waxman (USA) Eric Lingueglia (France) Ardem Patapoutian (USA)

### **Session 2** Voltage-operated calcium channels as targets for analgesic action

Chairs: Annette Dolphin (UK) & Terrance P Snutch (Canada)

Speakers: Annette Dolphin (UK) Terrance P Snutch (Canada) Slobodan M Todorovic (USA) Emmanuel Bourinet (France)

### **Session 3** Synaptic plasticity in analgesia-related pathways

Chairs: Clifford J Woolf (USA) & MacDonald J Christie (Australia)

Speakers: Clifford J Woolf (USA) MacDonald J Christie (Australia) Mike Salter (Canada) Hans Ulrich Zeilhofer (Switzerland)

### **Session 4** Ion channels as molecular targets for general anaesthetics

Chairs: Nicholas Franks (UK) & Michel Lazdunski (France)

Speakers: Nicholas Franks (UK) Michel Lazdunski (France) Neil L Harrison (USA) Douglas A Bayliss (USA)

## FC04 **Pharmacoepidemiology, current controversies and opportunities** Leaders: Bert Leufkens (The Netherlands) & Jesper Hallas (Denmark)

### **Session 1** Methodological issues in pharmacoepidemiology

Chairs: Jesper Hallas (Denmark) & Til Stürmer (USA)

Speakers: Samy Suissa (Canada) Robert J Glynn (USA) Olaf H Klungel (The Netherlands) Til Stürmer (USA)

### **Session 2** Advanced methods for signal generating in claims databases

Chair: Andrew Bate (Sweden)

Speakers: Andrew Bate (Sweden) Hugh H Tilson (USA) Paul Stang (USA) Stephen JW Evans (UK)

### **Session 3** Regulatory challenges in managing risk of medicinal products

Chair: Bert Leufkens (The Netherlands)

Speakers: June M Raine (UK) Stephen JW Evans (UK) Marieke de Bruin (The Netherlands) DJ Graham (USA)

### **Session 4** In utero exposure to drugs

Chairs: Lolkje TW de Jong-van den Berg (The Netherlands) & Corinne de Vries (UK)

Speakers: Lolkje TW de Jong-van den Berg (The Netherlands) Trent D Stephens (USA) Per Damkier (Denmark) Corinne de Vries (UK)

**Please periodically check <http://www.WorldPharma2010.org> since the programme offerings will continue to change.**

# FOCUSED CONFERENCES (continued)

**FC05 Translational science in the metabolic syndrome: Basic and clinical pharmacology (Sponsored by an unrestricted grant from Novo Nordisk A/S)**  
Leaders: Leif Groop (Sweden) Henning Beck-Nielsen (Denmark) & Jan-Erik Henriksen (Denmark)

**Session 1 New molecular targets in metabolic syndrome**

Chairs: Jørgen Rungby (Denmark) & Anna Krook (Sweden)

Speakers: Bjørn Richelsen (Denmark) Anna Krook (Sweden) John PH Wilding (UK) Fabrice Chimienti (France)

**Session 2 Pharmacotherapy in type 2 diabetes mellitus complicated with cardiovascular disease**

Chairs: Hans Erik Bøtker (Denmark) & Patricia Iozzo (Finland)

Speakers: Heinrich Taegtmeyer (USA) Paolo G Camici (UK) Steen Dalby Kristensen (Denmark) Janne T Backman (Finland)

**Session 3 Normalizing blood glucose in metabolic syndrome I: GLP-1 analogues and DPP IV inhibitors**

Chairs: Jens Juul-Holst (Denmark) & Michael A Nauck (Germany)

Speakers: Lotte Bjerre Knudsen (Denmark) David M Kendall (USA) Fiona M Gribble (UK) Baptist Gallwitz (Germany)

**Session 4 Normalizing blood glucose in metabolic syndrome II: Glitazones and metformin**

Chairs: Philip Home (UK) & Henning Beck-Nielsen (Denmark)

Speakers: Michael Roden (Germany) Philip Home (UK) Amanda Adler (UK) Henning Beck-Nielsen (Denmark)

**FC06 The heart gone wrong: Stabilization of cardiac function**

Leaders: Michael Sanguinetti (USA) & Lionel H Opie (South Africa)

**Session 1 Molecular mechanisms of arrhythmia**

Chairs: Michael Sanguinetti (USA) & Søren-Peter Olesen (Denmark)

Speakers: Michael Sanguinetti (USA) Penelope A Boyden (USA) David S Rosenbaum (USA) Søren-Peter Olesen (Denmark)

**Session 2 Novel anti-arrhythmics**

Chairs: Stanley Nattel (Canada) & Leif Carlsson (Sweden)

Speakers: Stanley Nattel (Canada) Leif Carlsson (Sweden) Jean-Marc Davy (France) Denis Roy (Canada)

**Session 3 Novel treatments for systolic heart failure**

Chairs: Lionel H Opie (South Africa) & Kenneth R Chien (USA)

Speakers: Lionel H Opie (South Africa) Kenneth R Chien (USA) Finn Olav Levy (Norway) David A Kass (USA)

**Session 4 Treatment options for diastolic heart failure**

Chairs: Douglas L Mann (USA) & Peter P Liu (Canada)

Speakers: Douglas L Mann (USA) Peter P Liu (Canada) Kinya Otsu (Japan)

# FOCUSED CONFERENCES (continued)

## FC07 **Simulation and data modelling in drug development: Better drugs faster?** Leader: Hartmut Derendorf (USA)

### **Session 1** Modelling and simulation – how and why

Chair: Erik Mosekilde (Denmark)

Speakers: Erik Mosekilde (Denmark) Hiroaki Kitano (Japan) Albert Goldbeter (Belgium) Birgit Schoeberl (USA)

### **Session 2** Disease models – using virtual organs and patient populations

Chairs: Hartmut Derendorf (USA) & Amin Rostami-Hodjegan (UK)

Speakers: Amin Rostami-Hodjegan (UK) Mats O Karlsson (Sweden) Blanca Rodriguez (UK) Francis Lévi (France)

### **Session 3** Modelling and simulation in clinical drug development

Chair: Hans-Günter Schäfer (Germany)

Speakers: Hans-Günter Schäfer (Germany) Marc Pfister (USA) Sriram Krishnaswami (USA) Donald Stanski (Switzerland)

### **Session 4** Modelling and simulation – a regulator's view

Chair: Jogarao VS Gobburu (USA)

Speakers: Jogarao VS Gobburu (USA) Franz König (UK) Yuki Ando (Japan) Siv Jönsson (Sweden)

## FC08 **Developments in the treatment of sexual dysfunction and diseases of the lower urinary tract** Leaders: Francois Giuliano (France) & Karl Erik Andersson (USA)

### **Session 1** Pharmacological treatment of erectile dysfunction

Chair: Petter Hedlund (Sweden)

Speakers: Petter Hedlund (Sweden) Jackie D Corbin (USA) Jeremy PW Heaton (Canada) Tom F Lue (USA)

### **Session 2** Treatment of sexual dysfunction associated with cardiovascular disease

Chairs: Ulf Simonsen (Denmark) & Graham Jackson (UK)

Speakers: Delphine Behr-Roussel (France) Kanchan Chitale (USA) Graham Jackson (UK) Javier Angulo (Spain)

### **Session 3** Pharmacological treatment of lower urinary tract syndrome / benign prostatic hyperplasia

Chairs: Petter Hedlund (Sweden) & Francois Giuliano (France)

Speakers: Francois Giuliano (France) Karl Erik Andersson (USA) Enrico Colli (Denmark) Christian Gratzke (Germany)

### **Session 4** Pharmacological treatment of bladder dysfunction

Chairs: Karl Erik Andersson (USA) & Mark T Nelson (USA)

Speakers: George J Christ (USA) Christopher H Fry (UK) Mark T Nelson (USA) Marcus John Drake (UK)



# FOCUSED CONFERENCES (continued)

## FC09 Inflammation and immunopharmacology: New tools for old diseases

Local coordinator: Eeva Moilanen (Finland)

Leaders: Ian Adcock (UK), Frans Nijkamp (The Netherlands) & Salvador Moncada (UK)

### Session 1 Steroids and beyond: Novel treatments for asthma and allergy

Chairs: Ian Adcock (UK) & Hiromasa Inoue (Japan)

Speakers: Ian Adcock (UK) Christian Taube (Germany) Cezmi A Akdis (Switzerland) Hiromasa Inoue (Japan)

### Session 2 Biologicals in inflammatory diseases – successes, promises and problems

Chairs: Marc Feldmann (UK) & Tom WJ Huizinga (The Netherlands)

Speakers: Marc Feldmann (UK) Tom WJ Huizinga (The Netherlands) Roland Martin (Germany) Michael G Tovey (France)

### Session 3 iNOS – nitric oxide pathway in inflammation and as a target of anti-inflammatory treatment

Chairs: Eeva Moilanen (Finland) & Salvador Moncada (UK)

Speakers: Eeva Moilanen (Finland) Kjell Alving (Sweden) David A Wink (USA) Richard G Knowles (UK) Salvador Moncada (UK)

### Session 4 NSAIDs and COX-2 inhibitors. Current strategies and future directions

Chairs: Jane A Mitchell (UK) & Per-Johan Jakobsson (Sweden)

Speakers: Jane A Mitchell (UK) Peter Zygmunt (Sweden) Ari Ristimäki (Finland)

### Session 5 Novel anti-inflammatory targets and mechanism

Chairs: Frans P Nijkamp (The Netherlands) & J Edwin Blalock (USA)

Speakers: Guy G Brusselle (Belgium) Gert Folkerts (The Netherlands) J Edwin Blalock (USA) Luke AJ O'Neill (Ireland)

## FC10 Drugs for half the world: Paediatric clinical pharmacology

Leader: John N van den Anker (USA)

### Session 1 Innovative methodological approaches in drug development in children

Chair: Gérard Pons (France)

Speakers: Gérard Pons (France) Emilio J Sanz (Spain) Karen I Barnes (South Africa) Viveca Odling (Sweden)

### Session 2 WHO and medicines in developing countries

Chair: Kalle Hoppu (Finland)

Speakers: Kalle Hoppu (Finland) Suzanne R Hill (Switzerland) Shalini Sri Ranganathan (Sri Lanka) Gregory L Kearns (USA)

### Session 3 Formulation issues

Chairs: Jörg Breitzkreutz (Germany) & Klaus Rose (Switzerland)

Speakers: Atieno Ojoo (Denmark) Jörg Breitzkreutz (Germany) Anthony J Nunn (UK) Catherine Tuleu (UK)

### Session 4 Pain in children

Chair: Dick Tibboel (The Netherlands)

Speakers: Dick Tibboel (The Netherlands) John N van den Anker (USA) Karel Allegaert (Belgium) Lena Hellström-Westas (Sweden)

### Session 5 Recent advances in paediatric clinical pharmacology

Chair: Shinya Ito (Canada)

Speakers: Evelyne Jacqz-Aigrain (France) Bruce Carleton (Canada) Shinya Ito (Canada) Shunpei Yokota (Japan)

*Continued on page 15...*

# FOCUSED CONFERENCES (continued)

## FC11 **G protein-coupled 7TM receptors: From molecular to physiological function**

Leaders: Brian K Kobilka (USA) & Jean-Philippe Pin (France)

### **Session 1** 7TM receptor structure

Chair: Gebhard FX Schertler (UK)

Speakers: Gebhard FX Schertler (UK) Thue W Schwartz (Denmark) Klaus Peter Hofmann (Germany) Hisato Jingami (Japan)

### **Session 2** 7TM receptors: Activation, inactivation and allosteric modulation

Chairs: Jean Philippe R Pin (France) & Thue W Schwartz (Denmark)

Speakers: Jean Philippe R Pin (France) Arthur Christopoulos (Australia) Adriaan P IJzerman (The Netherlands) Mette M Rosenkilde (Denmark)

### **Session 3** 7TM receptors: Scaffolding and signalling mechanisms

Chairs: Michel Bouvier (Canada) & Heidi E Hamm (USA)

Speakers: Michel Bouvier (Canada) Heidi E Hamm (USA) Laurant Fagni (France) Ralf Jockers (France)

### **Session 4** 7TM receptors: Genetic mouse models and disease

Chairs: Marc G Caron (USA) & Brigitte L Kieffer (France)

Speakers: Marc G Caron (USA) Lutz Hein (Germany) Sadaf Farooqi (UK) Brigitte L Kieffer (France)

### **Session 5** 7TM receptors: Drug discovery and new physiological functions

Chairs: Hans Bräuner-Osborne (Denmark) & P Jeffrey Conn (USA)

Speakers: Hans Bräuner-Osborne (Denmark) P Jeffrey Conn (USA) Stephan Offermanns (Germany) Birgitte Holst (Denmark)

## FC12 **Ion channelopathies: New windows on complex disease and therapy**

Leader: William A Catterall (USA)

### **Session 1** Ion channelopathies in the brain: Inherited epilepsy and migraine

Chairs: William A Catterall (USA) & Daniela Pietrobon (Italy)

Speakers: Ingrid Scheffer (Australia) William A Catterall (USA) Massimo Mantegazza (Italy) Daniela Pietrobon (Italy)

### **Session 2** Ion channelopathies of peripheral nerve and muscle: Inherited pain and periodic paralysis

Chairs: Stephen G Waxman (USA) & Karin Jurkat-Rott (Germany)

Speakers: Stephen G Waxman (USA) Theodore R Cummins (USA) Karin Jurkat-Rott (Germany) Todd Scheuer (USA)

### **Session 3** Ion channelopathies in the cardiovascular system: Inherited arrhythmia and hypertension

Chairs: Michael C Sanguinetti (USA) & Bernard C Rossier (Switzerland)

Speakers: Michael C Sanguinetti (USA) Alfred L George (USA) Andrew R Marks (USA) Bernard C Rossier (Switzerland)

### **Session 4** Ion channelopathies in endocrine systems

Chairs: Per-Olof Berggren (Sweden) & Louis J Ptacek (USA)

Speakers: Per-Olof Berggren (Sweden) Frances Ashcroft (UK) Colin G Nichols (USA) Louis J Ptacek (USA)

### **Session 5** Ion channelopathies in lymphocytes: Severe combined immunodeficiency and store-operated calcium channels

Chair: Michael D Cahalan (USA)

Speakers: Michael D Cahalan (USA) Richard S Lewis (USA) Stefan Feske (USA) Anjana Rao (USA)

# FOCUSED CONFERENCES (continued)

## FC13 Maximising benefits and minimising harms from drugs

Organised by British Pharmacological Society  
Leaders: Munir Pirmohamed (UK) & B Kevin Park (UK)

### Session 1 Drug safety: The epidemiology

Chairs: Kees van Grootheest (The Netherlands) & Alasdair Breckenridge (UK)  
Speakers: Kees van Grootheest (The Netherlands) Michael A Ibara (USA)  
Alasdair Breckenridge (UK) Simon Thomas (UK)

### Session 2 Drug metabolism and drug toxicity

Chairs: Frank J Gonzalez (USA) & B Kevin Park (UK)  
Speakers: Frank J Gonzalez (USA) Kevin Park (UK) Sten Orrenius (Sweden)  
William E Evans (USA)

### Session 3 Pharmacogenomics and adverse drug reactions

Chairs: Steven J Leeder (USA) & Munir Pirmohamed (UK)  
Speakers: Elizabeth J Phillips (Australia) Ann K Daly (UK) Steven J Leeder  
(USA) Munir Pirmohamed (UK)

### Session 4 New technologies – will they help in developing safer drugs

Chairs: David B Goldstein (USA) & Roy Goodacre (UK)  
Speakers: David B Goldstein (USA) Roy Goodacre (UK) Richard S Paules  
(USA) Ulrich M Zanger (Germany)

### Session 5 New insights in the genetics of drug metabolism and action

Chairs: Magnus Ingelman-Sundberg (Sweden) & Richard M Weinshilboum (USA)  
Speakers: Magnus Ingelman-Sundberg (Sweden) Ian P Hall (UK) Jörn  
Lötsch (Germany) Richard M Weinshilboum (USA)

## FC14 Addiction and doping: neurobiological and clinical basis of emerging treatments

Leaders: Markus Heilig (USA) & Yavin Shaham (USA)

### Session 1 Pharmacological treatment of opiate dependence – much achieved, much left to do

Chairs: Sharon Walsh (USA) & Yasmin Hurd (USA)  
Speakers: Sharon Walsh (USA) Yasmin Hurd (USA) Christopher Evans (USA)  
Nicolas C Clark (Switzerland)

### Session 2 Pharmacological treatments of alcohol dependence—illusion or opportunity?

Chairs: Rainer Spanagel (Germany) & Barbara J Mason (USA)  
Speakers: Rainer Spanagel (Germany) Giovanni Addolorato (Italy) Selena E  
Bartlett (USA) Barbara J Mason (USA)

### Session 3 Craving and relapse to drug seeking: Lessons from animal models and human brain imaging

Chairs: Peter W Kalivas (USA) & Yavin Shaham (USA)  
Speakers: Peter W Kalivas (USA) Yavin Shaham (USA) Rajita Sinha (USA)  
Lin Lu (PR China)

### Session 4 The role of stress in the addictive process

Chairs: George F Koob (USA) & Markus Heilig (USA)  
Speakers: George F Koob (USA) Markus Heilig (USA) Klaus A Miczek (USA)  
Charles Chavkin (USA)

### Session 5 Doping – an underestimated problem with many unknowns

Chairs: Harrison G Pope (USA) & Anders Rane (Sweden)  
Speakers: Harrison G Pope (USA) Gary I Wadler (Canada) Ingmar Thiblin  
(Sweden) Ruth I Wood (USA)

*Continued on page 17...*

# FOCUSED CONFERENCES (continued)

## FC15 Endothelium in health and disease

Organised by British Pharmacological Society

Leaders: Christopher J Garland (UK) & Arthur Weston (UK)

### Session 1 Nitric oxide and oxidative stress

Chairs: Frank M Faraci (USA) & Christopher G Sobey (Australia)

Speakers: Ralph Brandes (Germany) Frank M Faraci (USA) Thomas H Hintze (USA) Christopher G Sobey (Australia)

### Session 2 Endothelium-dependent hyperpolarization

Chairs: Chris J Garland (UK) & Arthur Weston (UK)

Speakers: Arthur Weston (UK) Christopher J Garland (UK) Jacob Tfelt-Hansen (Denmark) Mark T Nelson (USA)

### Session 3 Endothelium-mediated control of vascular tone

Chairs: Paul M Vanhoutte (Hong Kong) & David J Webb (UK)

Speakers: Michel Félétou (France) Yu Huang (PR China) Joachim Jankowski (Germany) William B Campbell (USA) David J Webb (UK)

### Session 4 Drug development and novel therapeutic targets and approaches

Chairs: Johannes-Peter Stasch (Germany) & Harald Schmidt (Australia)

Speakers: Johannes-Peter Stasch (Germany) Csaba Szabó (USA) Ulrich Förstermann (Germany) Harald Schmidt (Australia)

## FC16 Natural products: Past and future?

Leaders: Ricky Ying-Keung Man (PR China), Tai-Ping Fan (UK) & Zhi-Bin Lin (PR China)

### Session 1 Cardioprotection by natural products

Chairs: Roberto Soares de Moura (Brazil) & David D Ku (USA)

Speakers: Valerie Schini-Kerth (France) Thomas F Lüscher (Switzerland) David D Ku (USA) Hiroaki Shimokawa (Japan)

### Session 2 Products derived from one single plant with convincing pharmacological data in explaining their mechanism of action

Chairs: Yong-Xiang Zhang (PR China) & Rudolf Bauer (Austria)

Speakers: Zhi-Bin Lin (PR China) Rudolf Bauer (Austria) Elaine Elisabetsky (Brazil) Anwari Hassul Gilani (Pakistan)

### Session 3 Multiple plant products: A matter of synergy

Chairs: Zhi-Bin Lin (PR China) & Tai-Ping Fan (UK)

Speakers: Yong-Xiang Zhang (PR China) Henry Sun (PR China) Zhu Chen (PR China) Kinzo Matsumoto (Japan)

### Session 4 East meets west: From prevention to therapy

Chairs: Paul M Vanhoutte (Hong Kong) & Arnold G Herman (Belgium)

Speakers: Tai-Ping Fan (UK) Arunabha Ray (India) Arnold G Herman (Belgium) Guoan Luo (PR China)

### Session 5 Globalization of natural / traditional products

Chairs: Ricky Ying-Keung Man (PR China) & Monique Simmonds (UK)

Speakers: Yuri N Zhuravlev (Russian Federation) Monique Simmonds (UK) Yung-chi [Tommy] Cheng (USA) Josephine P Briggs (USA)

# FOCUSED CONFERENCES (continued)

## FC17 New approaches and targets in psychiatry

Sponsored by an unrestricted grant from H. Lundbeck A/S  
Leaders: David J Nutt (UK) & Birte Glenthøj (Denmark)

### Session 1 The pathophysiological basis for psychosis

Chairs: Anthony A Grace (USA) & Albert Gjedde (Denmark)

Speakers: Anthony A Grace (USA) Albert Gjedde (Denmark) Anissa Abi-Dargham (USA)

### Session 2 Exploring new targets in schizophrenia using translation science

Chairs: P Jeffrey Conn (USA) & Torgny H Svensson (Sweden)

Speakers: John L Waddington (Ireland) Peter J Uhlhaas (Germany) P Jeffrey Conn (USA) Torgny H Svensson (Sweden)

### Session 3 Clinical aspects of treatment with antipsychotics

Chairs: Shitij Kapur (UK) & Birte Glenthøj (Denmark)

Speakers: Shitij Kapur (UK) Birte Glenthøj (Denmark) Andreas Meyer-Lindenberg (Germany)

### Session 4 Exploring new targets in affective disorders using translational science

Chairs: Christopher A Lowry (USA) & David J Nutt (UK)

Speakers: Christopher A Lowry (USA) Arne Mørk (Denmark) Catherine J Harmer (UK) David J Nutt (UK)

### Session 5 New pharmacological approaches for treatment of stress induced mood disorders

Chairs: Elisabeth B Binder (Germany) & Rosanio Leopardi (Switzerland)

Speakers: Elisabeth B Binder (Germany) Hans Reul (UK) Eric Vermetten (The Netherlands) Rosanio Leopardi (Switzerland)

## FC18 Nuclear receptor targets for treatment of diseases

Local coordinator: Susanne Mandrup (Denmark)

Leaders: Bart Staels (France) & Vincent Laudet (France)

### Session 1 Nuclear receptors and metabolic control

Chairs: David J Mangelsdorf (USA) & Susanne Mandrup (Denmark)

Speakers: Peter Tontonoz (USA) Béatrice Desvergne (France) David J Mangelsdorf (USA) Susanne Mandrup (Denmark)

### Session 2 Nuclear receptors, vascular function and inflammation

Chairs: Christopher K Glass (USA) & Bart Staels (France)

Speakers: Christopher K Glass (USA) Bart Staels (France) John Funder (Australia) Carlie JM DeVries (The Netherlands)

### Session 3 Nuclear receptors in the CNS

Chairs: Michael T Heneka (Germany) & Gary E Landreth (USA)

Speakers: Osborne F Almeida (Germany) Jaroslaw Aronowski (USA) Michael T Heneka (Germany) Gary E Landreth (USA)

### Session 4 The molecular basis of NR pharmacology

Chairs: Shigeaki Kato (Japan) & Vincent Laudet (France)

Speakers: Fraydoon Rastinejad (USA) Gordon Hager (USA) Shigeaki Kato (Japan) Vincent Laudet (France)

# WORKSHOPS

## Sunday 18 July

**CW1**  
**12:45–16:15**

### **Nutrient chemosensing in the gastrointestinal tract**

IUPHAR Section of Gastrointestinal Pharmacology

Contact: CH Cho, The Chinese University of Hong Kong, PR China, [chcho@cuhk.edu.hk](mailto:chcho@cuhk.edu.hk)

<http://www.WorldPharma2010.org/CW1.pdf>

**CW2**  
**12:45–16:15**

### **Targeting TRP channels for pain relief (and more)**

Contact: Arpad Szallasi, Drexel University College of Medicine, Philadelphia, USA, [aszallasi@SBHCS.com](mailto:aszallasi@SBHCS.com)

<http://www.WorldPharma2010.org/CW2.pdf>

**CW4**  
**12:45–16:15**

### **Pharmacology of adrenoceptors: Eighth satellite meeting**

Contact: Mika Scheinin, University of Turku, Finland, [mika.scheinin@utu.fi](mailto:mika.scheinin@utu.fi)

<http://www.WorldPharma2010.org/CW4.pdf>

## Monday 19 July

**SW01**  
**12:30–14:30**

### **Clinical trials across Europe and the role of pharmacologists**

Turkish Pharmacological Society

Contact: Zafer Güney, Gazi University Medical School, Turkey, [zguney@gazi.edu.tr](mailto:zguney@gazi.edu.tr)

<http://www.WorldPharma2010.org/SW1.pdf>

**SW07**  
**12:30–14:30**

### **Effect of disease on cytochrome P450 and membrane transporters**

Canadian Society of Pharmacology and Therapeutics

Contact: Patrick du Souich, University of Montreal, Canada, [patrick.du.souich@umontreal.ca](mailto:patrick.du.souich@umontreal.ca)

<http://www.WorldPharma2010.org/SW7.pdf>

**SW11**  
**12:30–14:30**

### **Circadian clocks for drug development and therapeutics**

Institut National de la Santé et de la Recherche Médicale (INSERM, France)

Contact: Francis Lévi, INSERM U 776, Villejuif, France, [francis.levi@inserm.fr](mailto:francis.levi@inserm.fr)

<http://www.WorldPharma2010.org/SW11.pdf>

**SW16**  
**12:45–14:15**

### **Identifying targets for treating vascular diseases associated to metabolic disorders**

Spanish Association of Pharmacology

Contact: Concepción Peiró, Universidad Autónoma de Madrid, Spain, [concha.peiro@uam.es](mailto:concha.peiro@uam.es)

<http://www.WorldPharma2010.org/SW16.pdf>

## Tuesday 20 July

**SW02**  
**12:30–14:30**

### **Novel peripheral mechanisms modulating the cardiovascular system: Pathophysiological, pharmacological and therapeutic relevance**

Mexican Pharmacological Society

Contact: Carlos M Villalón, Cinvestav-Coapa, Mexico, [cvillalon@cinvestav.mx](mailto:cvillalon@cinvestav.mx)

<http://www.WorldPharma2010.org/SW2.pdf>

**SW05**  
**12:30–14:30**

### **Translating the human genome: From orphan G-protein coupled receptors to novel therapeutic targets**

International Union of Basic and Clinical Pharmacology Committee on Receptor Nomenclature and Drug Classification (NC-IUPHAR)

Contact: Anthony P Davenport, University of Cambridge, UK, [apd10@medschl.cam.ac.uk](mailto:apd10@medschl.cam.ac.uk)

<http://www.WorldPharma2010.org/SW5.pdf>

**SW06**  
**12:30–14:30**

### **The IUPHAR initiative in integrative and organ systems pharmacology**

IUPHAR Integrative and Organ Systems Pharmacology Committee

Contact: David B Bylund, University of Nebraska, USA, [dbylund@unmc.edu](mailto:dbylund@unmc.edu)

<http://www.WorldPharma2010.org/SW6.pdf>

## WORKSHOPS (continued)

### Tuesday 20 July (continued)

**SW08**  
**12:30–14:30**

**Antioxidants as therapeutic targets**

Canadian Society of Pharmacology and Therapeutics  
Contacts: Issy Laher, University of British Columbia, Canada,  
[ilaher@interchange.ubc.ca](mailto:ilaher@interchange.ubc.ca) & Chris Rembold, University of Virginia, USA,  
[cr2g@virginia.edu](mailto:cr2g@virginia.edu)  
<http://www.WorldPharma2010.org/SW8.pdf>

**SW12**  
**12:45–14:15**

**Implementation and obstacles of pharmacogenetics in clinical practice**

IUPHAR Subcommittee of Pharmacogenetics  
Contact: Ingolf Cascorbi, University Hospital Schleswig-Holstein, Germany,  
[cascorbi@pharmakologie.uni-kiel.de](mailto:cascorbi@pharmakologie.uni-kiel.de)  
<http://www.WorldPharma2010.org/SW12.pdf>

### Wednesday 21 July

**SW03**  
**12:30–14:30**

**IUPHAR Teaching Section: Pharmacology education for a sustainable future**

Contacts: PK Ragachari, McMaster University, Canada, [chari@mcmaster.ca](mailto:chari@mcmaster.ca) &  
Christiaan Brink, North-West University, South Africa, [tiaan.brink@nwu.ac.za](mailto:tiaan.brink@nwu.ac.za)  
<http://www.WorldPharma2010.org/SW3.pdf>

**SW04**  
**12:30–14:30**

**Inflammation – here, there and everywhere**

Finnish Pharmacological Society  
Contact: Heikki Vapaatalo, University of Helsinki, Finland,  
[heikki.vapaatalo@helsinki.fi](mailto:heikki.vapaatalo@helsinki.fi)  
<http://www.WorldPharma2010.org/SW4.pdf>

**SW09**  
**12:30–14:30**

**The Pfizer Senior Investigator Award in Pharmacology and the CSPT Junior Scientist Award**

Canadian Society of Pharmacology and Therapeutics  
Contact: Kathryn Gaebel, McMaster University, Canada, [gaebk@mcmaster.ca](mailto:gaebk@mcmaster.ca)  
<http://www.WorldPharma2010.org/SW9.pdf>

**SW13**  
**12:45–14:15**

**Applying pharmacogenomics (PGx) from research into clinical practice: present and future**

The Japanese Society of Clinical Pharmacology and Therapeutics  
Contact: Hiroshi Watanabe, Hamamatsu University, Japan,  
[hwat@hama-med.ac.jp](mailto:hwat@hama-med.ac.jp)  
<http://www.WorldPharma2010.org/SW13.pdf>

### Thursday 22 July

**SW10**  
**13:00–14:00**

**The Boehringer Ingelheim (Canada) Postdoctoral Award in Pharmacology**

Canadian Society of Pharmacology and Therapeutics  
Contact: Kathryn Gaebel, McMaster University Canada, [gaebk@mcmaster.ca](mailto:gaebk@mcmaster.ca)  
<http://www.WorldPharma2010.org/SW10.pdf>

**SW14**  
**12:45–14:15**

**New horizons in therapeutic drug management**

Danish Society of Clinical Chemistry Pharmacology  
Contact: Helle Riis Angelo, Bispebjerg Hospital, Denmark, [helle@angelo.dk](mailto:helle@angelo.dk)  
<http://www.WorldPharma2010.org/SW14.pdf>

**SW15**  
**12:45–14:15**

**Is the eNOS still a valid therapeutic target? – The era after the discovery of eNOS uncoupling**

Unrestricted grants from Sanofi Aventis and Actavia  
Contact: Huige Li, Johannes Gutenberg University, Germany,  
[huigeli@uni-mainz.de](mailto:huigeli@uni-mainz.de)  
<http://www.WorldPharma2010.org/SW15.pdf>

# WorldPharma2010

presents:

## IUPHAR Young Investigator Awards

**SUBMISSION DEADLINE  
15 JANUARY 2010**

During the congress, the traditional IUPHAR Young Investigator Award competitions will be held, an important initiative to involve young scientists in the symposia program of IUPHAR congresses.

The awards are open to pharmacologists who are in the first 10 years of the research career after obtaining their highest terminal degree (i.e. Ph.D, M.D.). Candidates who wish to compete for this award should indicate in the appropriate place on the abstract form that they wish their abstract to be considered for an IUPHAR Young Investigator Award. The young investigator award candidate must be first author on the submitted abstract.

Ten contributions will be selected by the IUPHAR Executive Committee. Those selected will be invited to present their work in a 10-minute oral presentation (plus 5 min discussion) in the dedicated symposium.

Scheduling will be confirmed in the final program. After the symposium, the Executive Committee will select three award recipients, based on the candidates' capacity to present experimental findings and defend their conclusions to an international audience.

There will be three awards:

|              |             |
|--------------|-------------|
| Gold Award   | \$1,000 USD |
| Silver Award | \$500 USD   |
| Bronze Award | \$250 USD   |

Awards will be presented at the closing ceremony and featured in the postcongress issue of the IUPHAR newsletter, *Pharmacology International*.

Further information about the awards and criteria for participation can be obtained from:  
IUPHAR Executive Office  
Ms. Lynn LeCount  
IUPHAR@kumc.edu

Please find further details on [www.WorldPharma2010.org](http://www.WorldPharma2010.org)

## Sponsored Symposium

Monday 19 July

**SS1**  
**12:30–14:30**

**Benefit / risk ratio for antipsychotics: Pharmacovigilance evidence and regulatory commitments**

Sponsor: AstraZeneca, Italy

Contact: Filippo Drago, University of Catania, Italy,

[f.drago@unict.it](mailto:f.drago@unict.it)

<http://www.WorldPharma2010.org/SS1.pdf>

## Satellite Meetings

**Sat3**  
**Stockholm,**  
**Sweden**  
**16–17 July**

**The role of clinical pharmacology in therapeutic drug monitoring and clinical pharmacogenetics**

Contact: Folke Sjöqvist, Karolinska Institute, Sweden,

[folke.sjoqvist@ki.se](mailto:folke.sjoqvist@ki.se)

**Sat4**  
**Copenhagen**  
**Denmark**  
**17–18 July**

**Empowering effective teaching in pharmacology for a safer tomorrow**

IUPHAR Teaching Section

Organizer: Joan Lakoski, Pittsburg, Pennsylvania, USA,

[lakoski@hs.pitt.edu](mailto:lakoski@hs.pitt.edu)

<http://www.IUPHAR-teach2010.org>

*Early Registration Deadline: 15 March 2010*

*Early Education Award Abstract Deadline: 15 January 2010*

**Sat1**  
**Odense,**  
**Denmark**  
**24–26 July**

**12th international symposium on vascular neuroeffector mechanisms**

Contact: Pernille B Lærkegaard Hansen, University of Southern Denmark, Odense, Denmark, [plaerkegaard@health.sdu.dk](mailto:plaerkegaard@health.sdu.dk)

<http://www.VNM2010.org>

*Abstract Submission Deadline: 1 March 2010*

*Registration Deadline: 22 May 2010*

*Hotel Reservation Deadline: 1 May 2010*

**Sat2**  
**Lund,**  
**Sweden**  
**24–27 July**

**The 20th annual symposium of the International Cannabinoid Research Society**

Contact: Allyn Howlett, Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA,

[president@cannabinoidsociety.org](mailto:president@cannabinoidsociety.org)

<http://www.ICRS2010.org>

Contact the President, Kim Brøsen ([kbrosen@health.sdu.dk](mailto:kbrosen@health.sdu.dk)), or Secretary-General, Mike Mulvany ([mm@farm.au.dk](mailto:mm@farm.au.dk)), to register your symposium, workshop or satellite meeting.

# IUPHAR sponsored meetings and workshops during WorldPharma2010

## **Workshop by the Section on Gastrointestinal Pharmacology** ***Challenges in modern gastrointestinal pharmacology:*** ***From functional disorders to neoplastic diseases***

Sunday, 18 July 2010 12:45 -16:15 (CW1)

Bella Conference Center, Copenhagen

Organised by the Section President, CH Cho, and Vice President, Koji Takeuchi, this workshop will explore the obstacles gastrointestinal pharmacology faces with an emphasis on chemosensing in the gastrointestinal tract. The topics to be presented by the international slate of speakers include:

- Role of gut peptides in satiation by Yvett Taché (USA)
- Tryptophan-free diet delays healing of chronic gastric ulcers in rat by Tomaz Brzozowski (Poland)
- Gastric endocrine cell chemosensing by Eiji Nakamura (Japan)
- Biology of cholecystokinin and gastric peptides by Jens F. Rehfeld (Denmark)
- Probiotics and gastrointestinal diseases by CH Cho (PR China)

For additional information, please contact:

CH Cho ([chcho@hkusua.hku.hk](mailto:chcho@hkusua.hku.hk))

The Chinese University of Hong Kong, P.R. China

## **Workshop by the Subcommittee on Pharmacogenetics** ***Implementation and obstacles of pharmacogenetics in clinical practice***

Tuesday, 20 July 2010 12:45 – 14:15 (SW12)

Bella Conference Center, Copenhagen

Organised by the Section Chair, Ingolf Cascorbi, and Magnus Ingelman-Sundberg, this workshop will focus on the current and desired levels of implementation of pharmacogenetics in the clinical setting with discussions about the associated challenges and strategies to overcome them. Subjects to be covered by the global experts include:

- Challenges in bringing pharmacogenetics into practice in the US by Deanna Kroetz (USA)
- Challenges of global implementation of pharmacogenetics into clinical practice by Guilherme Suarez-Kurtz (Brazil)
- Present use and limitations of pharmacogenetics in clinical psychiatry by Adrián Llerena (Spain)
- Obstacles to the implementation of pharmacogenetic testing in Australia by Andrew Somogyi (Australia)
- Imaging pharmacogenetics - brain fMRI for visualizing intermediate phenotypes of drug response by Julia Kirchheiner (Germany)
- Postgenomics medicine, empiricism and ethics of bioethics - preventing “ethical inflation” in implementation of pharmacogenetics by Vural Özdemir (Canada)

For additional information, please contact:

Ingolf Cascorbi ([cascorbi@pharmakologie.uni-kiel.de](mailto:cascorbi@pharmakologie.uni-kiel.de))  
University Hospital Schleswig-Holstein (Germany)

Continued on page 24...

# IUPHAR sponsored meetings and workshops during WorldPharma2010 (continued)

IUPHAR

Teaching Section:

## IUPHAR Pre-Conference Satellite

Empowering Effective Teaching in Pharmacology for a Safer Tomorrow



Pharmacology  
International

December 2009



### Who should attend?

*Pharmacology educators and teachers from a wide range of academic departments and schools (medical, pharmacy, dental, basic sciences & other), NGOs, industry, public sector and government. This symposium will be of wide interest to experienced and early stage educators in pharmacology and will provide a highly interactive forum for dialogue and discussion of the latest innovations and technologies that will advance learning and education in the broad discipline of pharmacology.*

### What will I learn & benefit?

*The programme comprises four interactive workshops on current topics in the pharmacology education environment of today. Participants will be able to attend two, and attend the feedback sessions of all four. There will also be poster presentations on novel and innovative strategies in pharmacology education.*

### Costs and affordability?

*Registration fees have been kept to a minimum and are listed on the website. Only one additional night of accommodation prior to WorldPharma2010 will be required.*

### Are there prestigious awards to enrol for?

*“Outstanding Pharmacology Early Educators’ Awards” will be introduced to promote capacity building and novel, innovative ideas from educators who joined the field recently. These prestigious awards offer attractive prizes and exposure.*

**17 - 18 July 2010**

**<http://www.IUPHAR-teach2010.org>**

# **IUPHAR** sponsored **meetings and workshops** during **WorldPharma2010** (continued)

## **Workshop on Integrative and Organ Systems Pharmacology**

Tuesday, 20 July 2010, 12:45 - 14:15 (SW6)

Bella Conference Center, Copenhagen

Largely as a result of the shift in focus of biological research to a more reductionist approach, there has been a decreased emphasis on pharmacological research activities essential for the translation of basic research findings into useful therapies. It has become apparent in the past few years that more emphasis must be placed on translational research in order to improve the health and well-being of mankind. To address this important issue, IUPHAR is pursuing a vigorous international initiative to promote training in the principles and techniques of Integrative and Organ Systems Pharmacology (IOSP).

This workshop will commence with a overview by David B. Bylund (IOSP Committee Chair) covering what IOSP is, the need for more training in IOSP principles and techniques, and explaining the IUPHAR IOSP initiative. This will be followed by talks covering the status of IOSP training in various areas, including Africa by Christiaan Brink and Europe by Michael Collis.

Some the resources that are currently available for IOSP training (web sites, DVDs, *etc.*) will be presented and conclude with a discussion how to further the goals of the IUPHAR IOSP initiative.

Registration is NOT required. For additional information, please contact:

David B. Bylund ([dbylund@unmc.edu](mailto:dbylund@unmc.edu))

University of Nebraska Medical Center, USA

## **IUPHAR Committee on Receptor Nomenclature (NC-IUPHAR)**

***Translating the human genome:***

***From orphan G-protein coupled receptors to novel therapeutic targets***

Tuesday, 20 July 2010 12:45 – 14:15 (SW5)

Bella Conference Center, Copenhagen

The complex road-map between the discovery and the resulting therapeutic will be presented for specific receptors in this workshop organised by the Vice Chairman of NC-IUPHAR, Anthony Davenport, and his colleagues. Topics include:

- Apelins and the APJ receptor by Anthony P. Davenport (UK)
- Relaxins and RXFP receptors by Roger J. Summers (Australia)
- Nicotinic acid and GPR109A by Stefan Offermans (Germany)
- Trace amines and TA1 receptors by Janet J. Maguire (UK)
- GPCR3 and modulation of amyloid-beta peptide generation in the central nervous system by B. de Strooper (Belgium)

For additional information, please contact:

Anthony Davenport ([apd10@medschl.cam.ac.uk](mailto:apd10@medschl.cam.ac.uk))

Cambridge University, UK

# COPENHAGEN HOTELS

Full map on next page (page 25)

Detailed excerpt below

## 5-star hotels

- 1 Hilton Copenhagen Airport (page 25)
- 2 Hotel D'Angleterre

## 4-star hotels

- 3 71 Nyhavn Hotel
- 4 Clarion Hotel Neptun
- 5 Copenhagen Island
- 6 Copenhagen Towers Crowne Plaza (page 25)
- 7 Grand Hotel
- 8 Hotel Imperial
- 9 Phoenix Copenhagen Hotel
- 10 Radisson Blu Falconer Hotel
- 11 Radisson Blu Scandinavia Hotel
- 12 Scandic Copenhagen
- 13 Scandic Palace

## 3-star hotels

- 14 Comfort Hotel Excelsior
- 15 Copenhagen Strand
- 16 Hotel Opera
- 17 The Square

## 2-star hotels

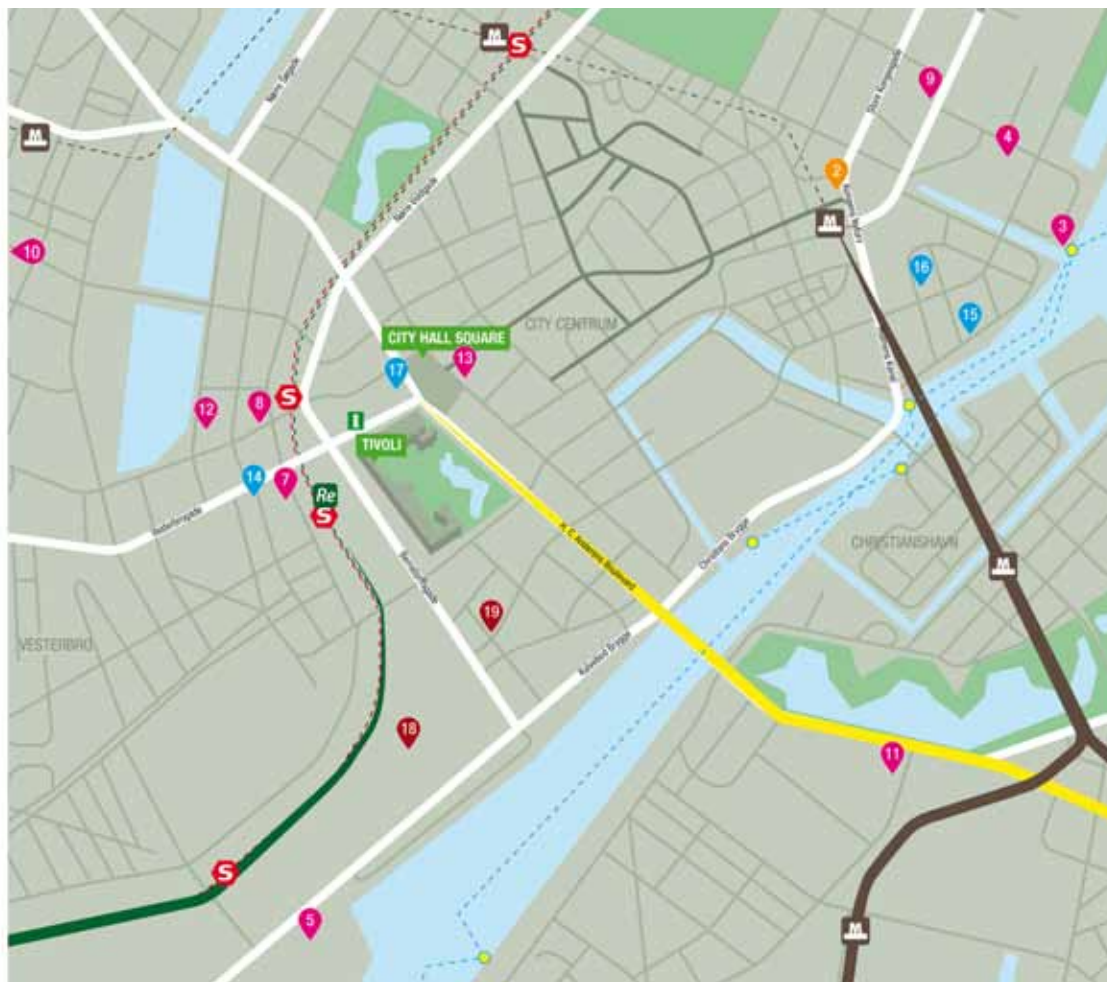
- 18 Wakeup Copenhagen
- 19 CABINN City
- 20 CABINN Metro (page 25)

Pharmacology  
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Please visit <http://www.WorldPharma2010.org/hotel.php> for more information.



# COPENHAGEN HOTEL MAP



## COPENHAGEN AREA TOP 10 PLACES TO SEE

### Tivoli Gardens

Amusement park and beautiful gardens.  
There will be a dinner sponsored by  
WorldPharma2010 on the grounds (page 9).  
For hours of operation and location, visit  
<http://www.tivoli.dk/composite-3351.htm>.



Photo courtesy of  
<http://en.wikipedia.org/wiki/FILE:Tivoligardens2.jpg>



Photo courtesy of  
[http://en.wikipedia.org/wiki/Christiansborg\\_Palace](http://en.wikipedia.org/wiki/Christiansborg_Palace)

### Christiansborg Palace

Home of Denmark's Parliament, the Prime Minister's Office and the Supreme Court. See  
<http://www.christiansborgslot.dk/en.aspx>  
for additional information.

### The National Museum

Housed in the "Princes' Palace", this museum covers Danish history from ancient times to the present. Information about admission, hours of operation, etc., can be found at  
<http://www.natmus.dk/sw20374.asp>.



Photo courtesy of  
<http://members.virtualtourist.com/m/p/m/2c2461>



Photo courtesy of  
<http://members.virtualtourist.com/m/p/m/2c2461>

### Carlsberg Brewery Visitors Centre

Founded in 1847 by J. C. Jacobson, who pioneered steam brewing, new techniques in refrigeration and the propagation of a single yeast strain. A must-see for everyone who enjoys beer. For more details visit  
<http://www.visitcarlsberg.dk>.

### Stroget Street

Billed as the "world's longest pedestrian only street" it covers about 1.5 km east from Tivoli Gardens and west to Kongens Nytorv Square. You will find many shops to choose souvenirs in this area.



Photo courtesy of  
<http://members.virtualtourist.com/m/p/m/1960c5>

Continued on page 29...

## COPENHAGEN (continued)



Photo courtesy of  
<http://www.copenhagenet.dk/CPH-Map?CPH-Gallery.asp>  
m/2c2461

### The Danish National Gallery

This museum houses European and Danish paintings along with 15th century sculptures. For specific details on hours of operations, admission and events, click on <http://www.smk.dk/smk.nsf/docs/forside!opendocument>.

### DFDS Canal Tours

A unique way to tour Copenhagen, the boats take you past many of the famous sights of the city. Additional information is available at <http://www.canaltours.com/dct/en>.



Photo courtesy of  
[http://www.tripadvisor.com/LocationPhotos-gg189541-d523562-DFDS\\_Canal\\_Tours-Copenhagen](http://www.tripadvisor.com/LocationPhotos-gg189541-d523562-DFDS_Canal_Tours-Copenhagen)



Photo courtesy of  
<http://www.copenhagenet.dk/CPH-RoundTower.htm>

### Rundetaarn (The Round Tower)

The oldest functioning observatory in Europe and home of the Spiral Walk - a 209 m long ramp that winds itself 7.5 times around the core of the Tower. See the website at <http://www.rundetaarn.dk/engelsk/frames.htm>.

### Louisiana Museum of Modern Art

This international museum houses a permanent collection of more than 3000 works from the period after 1945. It was named after the wives of Alexander Brun, all three of whom were named Louise. For details, visit <http://www.louisiana.dk/dk/Service+Menu+Right/English>.



Photo courtesy of  
<http://www.louisiana.dk>



Photo courtesy of  
<http://www.copenhagencpictures.dk/kronborg.html>

### Kronborg Castle

William Shakespeare's play "Hamlet" takes place in this castle located in Elsinore, north of Copenhagen. See <http://www.ses.dk/en/SlotteOgHaver/Slotte/Kronborg.aspx> for more information. •

# COPENHAGEN TRANSPORTATION

## The Metro

Operating at six minute intervals during the day and evening hours and every 15-20 minutes during the night. <http://intl.m.dk>



Photo courtesy of  
[http://www.visitcopenhagen.com/tourist/plan\\_and\\_book/transport\\_in\\_copenhagen/metro](http://www.visitcopenhagen.com/tourist/plan_and_book/transport_in_copenhagen/metro)

## Buses

Daytime, night and harbour bus transportation is available.  
<http://www.moviatrafik.dk/Service/Tourist/touristguideUK/Pages/TouristGuideUK.aspx>



Photo courtesy of  
[http://www.visitcopenhagen.com/tourist/plan\\_and\\_book/transport\\_in\\_copenhagen/metro](http://www.visitcopenhagen.com/tourist/plan_and_book/transport_in_copenhagen/metro)

CityCirkel offers sightseeing with a regular bus ticket.  
<http://www.citycirkel.dk/en>

## Trains

S-trains, regional and Øresund trains operate in and around Copenhagen.  
<http://www.dsb.dk/cs/Satellite?pagename=DSBUK/Forside>



Photo courtesy of  
[http://www.visitcopenhagen.com/tourist/plan\\_and\\_book/transport\\_in\\_copenhagen/trains](http://www.visitcopenhagen.com/tourist/plan_and_book/transport_in_copenhagen/trains)

## Fares

You will find colored zone maps at bus stops and in stations that can be used to calculate fares.  
[http://www.visitcopenhagen.com/tourist/plan\\_and\\_book/transport\\_in\\_copenhagen/fares](http://www.visitcopenhagen.com/tourist/plan_and_book/transport_in_copenhagen/fares)



Photo courtesy of  
[http://www.visitcopenhagen.com/tourist/plan\\_and\\_book/transport\\_in\\_copenhagen/trains](http://www.visitcopenhagen.com/tourist/plan_and_book/transport_in_copenhagen/trains)

## Ticket Outlets

Available on buses and in metro and train stations.  
[http://www.visitcopenhagen.com/tourist/plan\\_and\\_book/transport\\_in\\_copenhagen/ticket\\_outlets](http://www.visitcopenhagen.com/tourist/plan_and_book/transport_in_copenhagen/ticket_outlets)

# COPENHAGEN TRANSPORTATION

## Taxis

Traditional automobile taxis can be flagged down nearly anywhere. Most major credit cards are accepted. If the yellow "Taxa" light on the roof of the car or in the front window is on, the taxi is available for hire. The five water taxi - called *Flyvefisken* (flying fish) - can be flagged from the shore of Copenhagen Harbor or book one in advance by telephone (+45 3296 4964) or e-mail ([dik@flyvefisk.dk](mailto:dik@flyvefisk.dk)).  
[http://www.visitcopenhagen.com/tourist/plan\\_and\\_book/transport\\_in\\_copenhagen/taxis](http://www.visitcopenhagen.com/tourist/plan_and_book/transport_in_copenhagen/taxis)



Photo courtesy of  
[http://www.visitcopenhagen.com/tourist/plan\\_and\\_book/transport\\_in\\_copenhagen](http://www.visitcopenhagen.com/tourist/plan_and_book/transport_in_copenhagen)

## Bicycle Rental

Rent a bicycle and join the fight against poverty. The rental of a bike from Baisikeli Bike Rentals helps fund an annual shipment of bikes to Tanzania, Sierra Leone and Ghana.  
<http://www.cph-bike-rental.dk>

Guided bicycle tours are also available.  
[http://www.visitcopenhagen.com/content/tourist/what\\_to\\_see\\_and\\_do/tours\\_excursions/city\\_tours/by\\_bike](http://www.visitcopenhagen.com/content/tourist/what_to_see_and_do/tours_excursions/city_tours/by_bike)

Free bicycles are also available for loan.  
[http://www.visitcopenhagen.com/content/tourist/plan\\_and\\_book/transport\\_in\\_copenhagen/bike\\_city/free\\_city\\_bikes](http://www.visitcopenhagen.com/content/tourist/plan_and_book/transport_in_copenhagen/bike_city/free_city_bikes)



Photo courtesy of  
[http://www.visitcopenhagen.com/content/tourist/plan\\_and\\_book/transport\\_in\\_copenhagen/bike\\_city/free\\_city\\_bikesplan\\_and\\_book/transport\\_in\\_copenhagen/bike\\_city/free\\_city\\_bikes](http://www.visitcopenhagen.com/content/tourist/plan_and_book/transport_in_copenhagen/bike_city/free_city_bikesplan_and_book/transport_in_copenhagen/bike_city/free_city_bikes)

## Car Rental and Parking

A valid national or international driver's license is required. Most traffic signs are international and you drive on the right side.  
<http://www.cph.dk/CPH/UK/MAIN/Parking+and+Transport/Car+Rental.htm>

Specific rules, zones and fares apply when parking.  
[http://www.visitcopenhagen.com/content/tourist/plan\\_and\\_book/transport\\_in\\_copenhagen/parking](http://www.visitcopenhagen.com/content/tourist/plan_and_book/transport_in_copenhagen/parking)

## Airport Information

The abbreviation for the international Copenhagen Airport (in the suburb of Kastrup) is CPH. Additional information may be found at <http://www.cph.dk/CPH/UK/MAIN>.



Photo courtesy of <http://www.cph.dk/CPH/UK/MAIN>

# The Latest News from the IUPHAR-database

(<http://www.iuphar-db.org>)

The IUPHAR database of receptors and ion channels (IUPHAR-DB) is a freely accessible, peer-reviewed online resource, providing detailed structural, functional, pharmacological and pathophysiological annotation. It currently includes information on ~370 G-protein coupled receptors (GPCRs), including orphan GPCRs, and 141 voltage-gated ion channel subunits (VGICs). Recently, data on 11 ligand-gated ion channel (LGIC) subunits as well as several functional channels have been added, with further LGICs currently in progress. Other information provided about receptor/channel families include: comprehensive introductions, reference lists and downloadable gene lists.

## LIGAND LIST

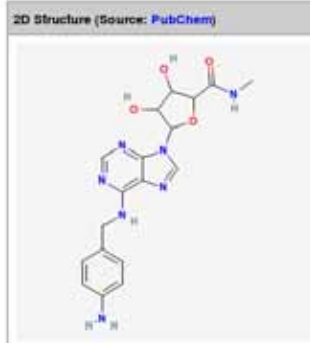
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

| Ligand name              | Synonyms                                                                                                                |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>A</b>                 | <a href="#">Back to top</a>                                                                                             |
| <a href="#">A-119637</a> |                                                                                                                         |
| <a href="#">A-123169</a> |                                                                                                                         |
| <a href="#">A127742</a>  | trans-trans-2-(4-methoxyphenyl)-4-[(1,3-benzodioxol-5-yl)-1-[[N,N-dibutylamino]carbonylmethyl]pyrrolidine-3-carboxylate |
| <a href="#">A192621</a>  |                                                                                                                         |
| <a href="#">A-304121</a> | 4-[3-[(2R)-2-aminopropanoyl-1-piperazinyl]propoxy]phenylcyclopropylmethanone                                            |
| <a href="#">A-317920</a> | N-[(1R)-2-[4-(3-[4-(cyclopropylcarbonyl)phenoxy]propyl)-1-piperazinyl]-1-methyl-2-oxoethyl]-2-furamide                  |
| <a href="#">A-349621</a> |                                                                                                                         |
| <a href="#">A61603</a>   | amide hydrobromide                                                                                                      |
| <a href="#">A-71378</a>  |                                                                                                                         |
| <a href="#">A-71623</a>  |                                                                                                                         |
| <a href="#">abarelix</a> |                                                                                                                         |
| <a href="#">AB-MECA</a>  |                                                                                                                         |
| <a href="#">AB-NECA</a>  |                                                                                                                         |
| <a href="#">ABT-239</a>  |                                                                                                                         |

## AB-MECA

IUPHAR-DB Ligand Id: 416

| Synonyms                                                                                  |
|-------------------------------------------------------------------------------------------|
| 5-[6-[(4-aminophenyl)methylamino]purin-9-yl]-3,4-dihydroxy-N-methyl-oxolane-2-carboxamide |
| N[(6)-4-aminobenzyladenosine-5'-N-methyluronamide                                         |



| Selectivity at human GPCRs     |         |              |          |                 |                         |           |
|--------------------------------|---------|--------------|----------|-----------------|-------------------------|-----------|
| Click column headers to sort   |         |              |          |                 |                         |           |
| Receptor                       | Type    | Action       | Affinity | Units           | Concentration range (M) | Reference |
| <a href="#">A<sub>2A</sub></a> | Agonist | Full agonist | 5.4      | pK <sub>i</sub> | -                       | 1         |
| <a href="#">A<sub>3</sub></a>  | Agonist | Full agonist | 7.7      | pK <sub>i</sub> | -                       | 1-2       |

## References

1. Klotz, K.-H., Hessler, J., Hegler, J., Owman, C., Kull, B., Fredholm, B. B. and Lohse, M. J. (1998)

**Figure:** Screenshots of the IUPHAR-DB ligand list and an individual ligand page. Ligand pages can now be reached by clicking on a ligand name on either the ligand list, or on tables of affinity data in receptor pages (e.g. agonist tables).

# The Latest News from the IUPHAR-database (continued)

(<http://www.iuphar-db.org>)

## \* New data in IUPHAR-DB:

- Complete annotation for 7 VGIC families:
  - Calcium-activated potassium channels
  - CatSper and two-pore channels
  - Cyclic nucleotide-regulated channels
  - Inwardly rectifying potassium channels
  - Voltage-gated calcium channels
  - Voltage-gated potassium channels
  - Voltage-gated sodium channels
- Complete annotation for 3 LGIC families:
  - 5-HT<sub>3</sub> receptors
  - Glycine receptors
  - Zinc-activated channel
- GPCR updates:
  - Complete annotation for Melanin-concentrating hormone receptors
  - P2Y receptors updated
  - Introduction added for Estrogen G protein-coupled receptor

## \* New features:

- Ligand list – complete list of all ligand molecules in IUPHAR-DB (see figure)
- Ligand pages – summarising data about individual ligand molecules including: synonyms, images of 2D structures from PubChem, tables of affinities and references (see figure).
- Nomenclature guidelines page including information for journal editors at <http://www.iuphar-db.org/nomenclature.html>

## \* Future expansion and upcoming features:

- Annotation of 47 nuclear hormone receptors
- Annotation of further LGIC families
- Chemistry data and tool set:
  - In-house ligand chemical structure database
  - Chemical structure searching
  - Physico-chemical profiles of ligands
- Annotation of 3D protein structures

We encourage you to draw the attention of your students and young researchers to the database, which is a valuable teaching resource. ●

Contact us:  
Joanna Sharman (Database Developer),  
Chido Mpamhanga (Curator)  
[curators@iuphar-db.org](mailto:curators@iuphar-db.org)



# Welcome to the Newest Members of IUPHAR!

## All-Ukrainian public organization *The Association of Pharmacologists of Ukraine*

The All-Ukrainian public organization “Association of Pharmacologists of Ukraine” (APU) was founded in October, 2001 under the leadership of the constituent assembly of representatives of scientific and academic pharmacological communities. The APU was established to protect the legal, social, creative, scientific and other common interests of its member pharmacologists. Initially, the organization numbered 236 members. Today, that figure has nearly doubled.

The Association is composed of 10 regional branches, each of which is devoted to solving important theoretical and applied issues in pharmacology. The Association also includes two member organizations: the State Institution “Institute of Pharmacology and Toxicology AMS Ukraine” and the State Enterprise “State Pharmacological Center MoH Ukraine”.

The main objectives of APU are to coordinate research and education in basic and clinical pharmacology at both research organizations and institutions of higher education; to foster the professional development of its members; to enhance skills in the discipline; to disseminate discoveries by Ukrainian pharmacologists; to promote the introduction of new Ukrainian medications; and to assist in the development of independent and creative pharmacologists.



Continued on page 35...



## *The Western Pharmacology Society*

The idea for a Western Pharmacology Society was first proposed in Carmel, California in 1956, with the organization officially established in 1957 by James Dilley. Dr. Dilley and a small group of founders met in Carmel in 1957 and agreed that the Society would be regional, drawing members from west of the Rocky Mountains, including British Columbia.



The initial Society meeting was held in San Francisco in January 1958, with the first *Proceedings* published that year. *The Proceedings of the Western Pharmacology*

*Society* (ISSN: 0083-8969) now appears each autumn. It contains a record of abstracts presented at the annual meeting, research articles covering presentations delivered at the meeting, invited reviews, and reports on Society business.

With a long and distinguished history, the Society has counted among its presidents some of the most accomplished pharmacologists of their time. Many of the

Continued on page 36...

## *The Association of Pharmacologists of Ukraine* (continued)

The Association is very active in helping to introduce modern training methods in basic and clinical pharmacology. Achievement of this goal is facilitated by the active participation of 15 pharmacology department chairs from the leading medical universities in the Ukraine. The Association is engaged in the professional development of young pharmacologists. This activity is greatly assisted by the National Schools for Young Pharmacologists of Ukraine, which were established in the 1990s by O.V. Stefanov, director of the Institute of Pharmacology and Toxicology. Participating institutions sponsor scientific programs which often include presentations on contemporary topics in pharmacology by famous scientists from around the world. More than 800 scientists have taken part in the activity of these eight schools. A hallmark of these presentations is the open communication between the audience and lecturers. This contributes greatly to the exchange of ideas between participants, and the education of the younger scientists. The APU also sponsors competitions to identify the best scientific publications of those post-graduate fellows and predoctoral students just launching their careers.



Recognizing the importance and necessity of harmonization of Ukrainian pre-clinical and clinical research in product development with international standards, the Association takes part in the training of the principles of Good Laboratory Practice (GLP), Good Clinical Practice (GCP), and pharmacovigilance. Since 2002 over 500 experts from all regions of the Ukraine have taken part in these classes. The APU supports the participation of its members in large forums, both domestic and foreign, that are devoted to discussing the pharmacology and toxicology of pharmaceutical products.

As clinical pharmacology forms the basis of evidence-based medicine and the rational use of medicinal agents, a section of clinical pharmacology was established within the APU in 2008. This section is taking a leading role in developing educational programs in the Ukraine in clinical pharmacology and pharmacokinetics.

The APU is a copublisher of *Pharmacology and Medicine Toxicology* (previously entitled *Medicines*), which disseminates novel research findings in the pharmacological sciences. Besides providing guidance and advice to those engaged in developing new drugs, Association members are often interviewed by the Ukrainian mass media about issues pertaining to product quality, safety and efficacy.

The Association held 16 conferences and seminars to help members improve their professional skills and to facilitate coordination of collaborative studies. During the III National Congress of Pharmacologists of Ukraine (2006) over 120 reports on basic and clinical research were presented by Association delegates. The next National Congress of Pharmacologists of Ukraine will be held in Simferopol in October 2011. The meeting will be open to pharmacologists, toxicologists and those working in associated disciplines.

The All-Ukrainian Public Organization “Association of Pharmacologists of Ukraine” gained full membership status in IUPHAR in 2009. We are eager to explore possible cooperative associations with other members of IUPHAR because of our conviction that the advancement of science requires collaborative interactions both locally and internationally.

For additional information about the APU in general, and about membership, please contact [farma@t.kiev.ua](mailto:farma@t.kiev.ua). •

## *The Western Pharmacology Society* (continued)

52 Society presidents have also contributed significantly to IUPHAR. The current Society president, Professor Laurence Brunton, will preside over the next annual meeting, which will be held in San Diego in February, 2010.

A hallmark of the Western Pharmacology Society is its emphasis on the training of young pharmacologists. The Society makes a special effort to provide financial support to enable students and fellows to attend the annual meetings. Poster sessions are organized to help ensure students receive constructive comments and suggestions from members in an informal setting. Traditionally, the annual meeting venues alternate between warm and snowy settings to give members a chance to enjoy their favorite recreational activities.

Since its founding, Society membership has remained small, with no effort made to compete at a national level with the American Society for Pharmacology and Therapeutics or the Canadian or Mexican Societies of Pharmacology. One of the most significant changes in the Society over the last two decades has been the increasing contributions from Mexican pharmacologists. Given the international character of the organization, an effort is made to rotate the presidency among members from the United States, Canada and Mexico. Annual meetings now attract participants from around the world. Currently the membership includes pharmacologists from fifteen countries.

The Western Pharmacology Society plays a vital role in sustaining the discipline by its emphasis on training and by hosting small meetings that allow for productive interactions and instruction. Moreover, the *Proceedings of the Western Pharmacology Society* has served as a launching pad for many leaders in the field.

The Western Pharmacology Society is happy to be counted among the members of IUPHAR, and looks forward to a mutually beneficial association. For more information please e-mail Iain Buxton at [ibuxton@medicine.nevada.edu](mailto:ibuxton@medicine.nevada.edu) or visit the website at <http://www.medicine.nevada.edu/wps/index.html>. •

### **Council**

#### *President:*

Laurence L. Brunton, University of California, San Diego, California, USA

#### *Immediate Past President:*

Carlos M. Villalón, Farmacobiología, Cinvestav-Coapa, Mexico City, Mexico

#### *Secretary:*

Linda Hedley, MDS Pharma Services, Bothell, Washington, USA

#### *Electronic Communications:*

Nigel Shankley, Johnson & Johnson PRD, San Diego, California, USA

#### *Student Councilor:*

Michael Pugsley, Johnson & Johnson Safety Pharmacology, New Jersey, USA

#### *Editor/Treasurer:*

Iain L. O. Buxton, University of Nevada School of Medicine, Reno, Nevada, USA

# The Latest Member News

## The New Website and President's Blog of the American Society for Pharmacology and Experimental Therapeutics (ASPET)

An interview with Dr. Brian M. Cox, ASPET President

*If you haven't visited the new ASPET website (<http://www.ASPET.org>) yet, you're in for a treat. You'll be greeted with a new format, new graphics, new links, well, new everything! What caught our attention was the President's Blog. Aren't blogs for college students with too much time on their hands? Not any more, says ASPET President, Brian Cox, who was kind enough to introduce us to communication in the new millenium...*

- What prompted ASPET to establish a blog?

The leadership at ASPET recognized some time ago that the ASPET website design was becoming dated and the previous website format limited the options available to us for communication with members through the website. Executive officer, Christie Carrico, allocated funds in the Society's 2009 budget for a redesign, and as these plans developed we began to evaluate more broadly the role of the website in Society activities. Effective and rapid communication with Society members and everyone interested in the world of pharmacology is critical if the Society is to play a useful role in supporting the professional interests of pharmacologists.

The screenshot shows the ASPET website in a Windows Internet Explorer browser window. The address bar displays <http://www.aspet.org/blog/default.asp>. The website features a navigation bar with links: HOME, FIND A MEMBER, DONATE, UPDATE PROFILE, FORUMS, STORE, CONTACT US. A search bar is also present. The main content area is titled "PHARMTALK - THE PRESIDENT'S BLOG" and includes a guest article by Paul A. Insel titled "Licensing examinations and scientific preparation of future physicians: Views of an ASPET participant (Medical Education)". The article discusses the importance of medical education and the role of pharmacology in medical schools. The website also includes a "MEMBER LOGIN" section on the left and a "Blogroll Archive" on the right.

Continued on page 38...

## ASPET President's Blog: An Interview with Brian Cox (continued)



**We can now more easily use the website to keep members informed of new developments affecting research and new developments in medical and graduate education.** The redesigned site also allows members and others to provide feedback indicating their interests and concerns.

Additionally, we wanted to use the new web-site to communicate more effectively with the younger generation of scientists now joining the Society, an initiative particularly emphasized by ASPET past president, Joe Beavo. With the help of Suzie Thompson, ASPET director of member services, we have also begun to use other Web 2.0 features, establishing an ASPET page on Facebook and a ASPET Twitter link. Currently these are used to provide information on ASPET programming. We plan to use Twitter in the future to keep interested members who choose to follow the Twitter feed informed about scientific presentations and social activities at our annual meeting as they are happening.

To manage the website for ASPET, the Society has established a Web Advisory Committee and has appointed a Web Editor, Jonathan Maybaum of the Department of Pharmacology at the University of Michigan, who is responsible for overall management of the website.

### - *Why did ASPET choose a blog format?*

Currently we have a blog called "Pharm Talk – the President's Blog" on the home page, and another blog, the "Web Editor Pipeline" (to be found under Interactive Columns), where Jonathan Maybaum is currently presenting an outline of his developing plans for the website. Other interactive columns on selected topics are planned for the future. **The blog format allows anyone to send a comment regarding the issues discussed in a blog entry, and thus helps us to understand the interests of members.**

In the Pharm Talk Blog, the President has an opportunity to highlight selected issues that may have significant consequences for the professional interests of pharmacologists. Our emphasis is on new developments in the USA, but we are also interested in keeping members informed of topics of importance to pharmacologists across the world. In order to get this started, we felt that the Society president should take the initiative in raising issues of the day that may impact on the future of pharmacology. For many topics, the president will invite others with expertise in specific areas to write the blog – we currently have an article running on two recent reports related to the future of medical education in the USA that may significantly change how we teach pharmacology to medical students. This article was written by a Society member, Paul Insel, who served on some of the committees directly involved in proposing these changes. Other guests have been invited to contribute future articles, including the secretary-general of IUPHAR on the upcoming IUPHAR 2010 meeting. We hope that pharmacologists in the USA and across the world will want to respond to blog entries with comments or questions. **The feed-back from comments to the blog is used by ASPET Council to help determine what issues are of greatest importance to members (and pharmacologists in general), and how to use**

*Continued on page 39...*

# ASPET President's Blog:

## An Interview with Brian Cox (continued)



**our limited public affairs resources in addressing these concerns.**

The redesigned website also contains more than the blogs. Part of the home page is devoted to announcements of events, activities and developments in the public affairs arena (Latest ASPET News). Other sections contain links to IUPHAR, FASEB and other professional societies, and to resources that might be of use to pharmacologists. There is also a "members only" section for issues related to membership and other Society business.

- *How do we access the blog, and is it easy to use?*

The ASPET website is easily accessed at <http://www.ASPET.org>, with the Pharm Talk Blog appearing in the center column on the home page. Clicking on a link in this column takes you to a specific article. At the end of the article there is a location for posting comments concerning the article. If you wish to post a comment, we ask for a name and e-mail address and, if you wish, the URL to your personal website. It is very easy to read articles and post comments.

- *Where do blog content ideas originate?*

**Issues for discussion in Pharm Talk come largely from news items and recent reports from organizations that are important to pharmacologists.** ASPET is already active through its Public Affairs Officer Jim Bernstein and its Public Affairs Committee in supporting member interests, but our activities in these areas would be enhanced by more active participation by well-informed members. Topics related to research opportunities, funding and regulation will always be important to members. Almost 50% of our members are affiliated in some ways with medical schools, so issues affecting the roles of pharmacologists in medical schools and their career development will also feature prominently. As the range of career opportunities for scientists trained in pharmacology is expanding, we hope to cover some of these new opportunities.

- *Who is the targeted audience?*

**Our primary target audience is ASPET members, although most of the material will be of interest to all in the field.** We are also planning to develop a section of the website targeted to members of the general public who are seeking reliable unbiased information on drugs. We welcome suggestions for novel content that might expand the appeal of the website.

- *Why do you feel it is important to bring these issues to the attention of that audience?*

We need our members to provide more active support for the public affairs endeavors of the Society. **Thus, in an age of increasing demands on limited resources, pharmacologists must get better at articulating the importance of pharmacology research and education in training of physicians and in support of improved health care delivery.** If we are not well-informed and vocal in the support of our interests, it is highly probable that funding for pharmacology research will decline relative to other areas, and the role of pharmacology as a fundamental component of medical education reduced.

We also hope to offer valuable information to non-member pharmacologists in the hope that some of these will become members of ASPET. **And as we develop more features that might be of interest to the general public and those seeking information about drugs, we are hoping that the value of supporting pharmacology research and education will become more generally recognized in the community as a whole.** •

# Milestone Anniversaries



## HISTORY OF THE ITALIAN SOCIETY OF PHARMACOLOGY 1939 – 2009

We are grateful to the IUPHAR president, Professor Sue Piper Duckles, and to the secretary-general, Professor Sam Enna, for giving the Italian Society of Pharmacology (SIF – Società Italiana di Farmacologia) the opportunity to share its 70<sup>th</sup> birthday with pharmacologists from all over the world. The Italian Society of Pharmacology was established 70 years ago on December 22, 1939 by royal decree number 2162. Italy at that time was a kingdom. A small group of professors and chairmen optimistically decided that “the time had come for Italian pharmacologists to recognize themselves as a family with a uniformity of scientific interests and a spirit of true collegial friendship”. The already existing American Society of Pharmacology and Experimental Therapeutics (1908), Deutsche Gesellschaft für Pharmakologie (1920), and British Pharmacological Society (1932) were taken as models. The first president was Professor Gaetano Vinci, of the University of Messina, a member of the Italian Senate.

The first national congress was held in Florence in December 1940. Italy had already entered World War II, but the War was still fought outside the country. The photograph at right shows the participants in the Congress. Wrapped up in their heavy coats against the December cold, they stand proud and worried about the future



on the stairs of the old Department of Pharmacology of Florence. Only one of them, Vittorio Erspamer, at that time an assistant professor, gained international recognition by independently co-discovering serotonin with I.H. Page and then isolating and characterizing scores of pharmacologically active peptides from amphibian skins.

The Proceedings of the First National Congress were published in the *Archivio Italiano di Scienze Farmacologiche*. They include two main lectures and 46 oral communications and document the modest level, with rare notable exceptions, of Italian pharmacological research in the second half of the thirties, in the climate of cultural isolation imposed by Fascism. The Society adopted the *Archivio*, founded in 1932, as its official journal. It was written in Italian and had limited circulation; a few members of the Society published their papers in foreign journals, mainly in

## ITALIAN SOCIETY OF PHARMACOLOGY (continued)

the *Archiv für Pathologie und Experimentelle Pharmacologie*, *Archives Internationelles de Pharmacologie et Pharmacodynamie* and the *Journal of Pharmacology and Experimental Therapeutics*. The second and third national Congresses were held in 1942 and 1944 when the war was ravaging the country, a surprising demonstration of the vitality of the Society. The fourth Congress was held in Rome in 1946 and since then a national congress has been held every second year in different cities. We are now at the 34<sup>th</sup> Congress held in Rimini in October 14 - 17, 2009. Its program included three main lectures, 40 symposia, 192 oral and 425 poster presentations. These figures demonstrate, better than anything else, the development of the Society in the 70 years since its establishment.

A “cultural revolution” took place in the Society at the 1<sup>st</sup> Joint Meeting (Florence, September 1968) with the British Pharmacological Society that was considered the model to imitate by the young members led by Professor Alberto Giotti (1922 - 2005). For the first time at a Society’s meeting, the presentations were selected by referees and given in English. A year later, the *Archivio* was discontinued and replaced by *Pharmacological Research*, published in English, which has gradually become an established international journal and is now the official journal of the Society. This revolution had a long incubation. Immediately after the war, Mario Aiazzi Mancini, professor in Florence, and Emilio Trabucchi, professor in Modena and then in Milan, both shown in the photograph on page 40, were aware, more than their older colleagues, that the future of Italian pharmacology depended on training young people abroad. They had the ability to attract and motivate many bright young students and from them the two largest pharmacological “schools” in Italy originated. Prompted and helped by them, many young Italian pharmacologists went abroad as PhD students or postdocs. While many remained abroad forever, others returned bringing with them familiarity with the English language and contacts with many foreign departments. They introduced new techniques, new ideas, and a new style in Italian pharmacological laboratories that began to lose definitively their provincial atmosphere. Another factor was the appointment in 1947 of Daniele Bovet (photograph at right) at the Istituto Superiore di Sanità in Rome as the Chief of the Laboratory of Therapeutic Chemistry, and Nobel Laureate, Ernst Chain, as the Chief of the Center of Microbiological Chemistry. Daniele Bovet received the Nobel Prize for Medicine in 1957 and became a professor in the Italian University. The presence of these two outstanding scientists was a strong stimulus and a training opportunity for many young pharmacologists. Since the sixties, with an increase in funds from public and private sources, Italian pharmacological research has gradually become more competitive and visible on the international scene.



At birth, the SIF had about 50 members but after the war and reconstruction, it began to grow rapidly. There were about 200 members in 1963, 550 in 1974, 842 in 1986, 1075 in 1994, 1150 in 2004 and 1160 in 2009. The bylaws were modified repeatedly throughout the years in order to respond to the growth of the Society and adapt it to changes in Academia, industry and the health system. SIF is presently managed by a president, Professor Achille Caputi of Messina, assisted by the past president, Professor Giovanni Biggio of Cagliari, and the president-elect, Professor Carlo Riccardi of Perugia, as well as by the secretary and Executive Council of six members. The president is elected for a two year term. The Society has a permanent office in Milan managed by an administrative secretary. The income of the Society comes from the membership fees, contributions from corporate members and profit from courses and meetings. A large part of the budget is invested in fellowships and travel grants for PhD students and postdocs. The Society also awards several prizes for the best publications in different pharmacological fields, funded by the Association of Pharmaceutical Industries (Farindustria), pharmaceutical companies and private foundations.



## ITALIAN SOCIETY OF PHARMACOLOGY

(continued)

Besides its biannual National Congresses, the SIF organizes small meetings on specific topics and, since 1997, at the beautiful Certosa di Pontignano near Siena, an annual National Seminar for PhD students of pharmacology and related disciplines, in which they have the opportunity to present and discuss their research with each other and their tutors. After the first successful meeting with the British Pharmacological Society in 1968, 23 joint meetings have been organized with European pharmacological societies to foster collaboration between European scientists. They were discontinued after the formation of European Federation of Pharmacological Societies (EPHAR) in whose establishment SIF played a substantial role. The first EPHAR Congress was held in Milan in 1996, and the first president was Professor Rodolfo Paoletti of Milan.

The SIF joined IUPHAR early and always contributed to its activity. Professor Rodolfo Paoletti and Professor Paolo Preziosi of Rome, served as councillors in the years 1975 - 1981 and 1994 - 1998, respectively. Professor Giancarlo Pepeu was elected auditor from 1998 to 2000. Professor Gian Paolo Velo of Verona and Professor Emilio Perucca of Pavia served as a councillors of IUPHAR Clinical Division in the years 1992 - 2000 and 2000 - 2008, respectively. Professor Velo, together with Professor Pepeu, organized the 7th World Conference on Clinical Pharmacology & Therapeutics held in Florence in the year 2000.

The SIF was born with the aim of fostering and diffusing the knowledge on drugs and their application in Italy and abroad. In 70 years it has changed from a typical learned society devoted mostly to the exchange of scientific information, the discussion of teaching problems and academic appointments among its members, to a professional society which, maintaining its primary interest in basic and clinical research, aims to promote pharmacology in Italy by fostering pharmacological education within the universities, the National Health System and the general public, by supporting young pharmacologists with travel fellowships and grants and helping them to find jobs, and by collaborating with public authorities and private organisations in disseminating expert opinions on drug efficacy and side effects. To achieve its aims, the SIF has established a Division of Clinical Pharmacology, formed working groups in pharmacogenetics, and gender pharmacology, and, through its members, promotes and participates in national and regional projects of pharmacoepidemiology and pharmacovigilance. These activities are made known through *Quaderni della SIF*, a quarterly magazine and in four on-line publications: the weekly *SIF Newsletter*, the biweekly *Drugs in Evidence*, the *Clinical Trial of the Month*, the *Pharmacogenetics Bulletin*, and the website, [www.sifweb.org](http://www.sifweb.org).

Seventy years after its foundation, we can claim that, notwithstanding rivalries and clashes, which are the salt of academic and scientific life, the optimistic hopes of the founders have been realized and the SIF has become a large family in which the Italian pharmacologists recognize themselves although not with a “uniformity of scientific interests” but with a diversity of interests required by the extraordinary expansion of pharmacology. ●

Giancarlo Pepeu  
University of Florence

# Milestone Anniversaries



## 50<sup>TH</sup> ANNIVERSARY OF THE INDEPENDENT PHARMACOLOGICAL SOCIETIES IN BOHEMIA AND SLOVAKIA

Like IUPHAR, the independent pharmacological society in the then Czechoslovakia evolved from the Physiological Society. The Czechoslovak Physiological Society was founded in 1951. From the beginning, a pharmacological committee was active within the Physiological Society, organizing pharmacological symposia to be held during the Physiology Congress. In June, 1959, the Czechoslovak Pharmacological Society (Československá farmakologická společnost) was established independent from the Physiological Society. Because at that time all medical societies and sections were, and still are, housed within the national Medical Association (founded in 1852), the pharmacology society accepted this patronage as well. After the 1993 separation of Czechoslovakia into the Czech and the Slovak Republics (see page 44), the organization officially split into the Czech Society for Experimental and Clinical Pharmacology and Toxicology (Česká společnost pro experimentální a klinickou farmakologii a toxikologii - ČSEKFT) in the Czech state, and the Slovak Pharmacological Society (Slovenská farmakologická společnost) and the Slovak Society of Clinical Pharmacology (Slovenská společnost klinické farmakologie) in the Slovak state.

Czech pharmacology as a distinct discipline dates back over one hundred years. The University of Prague (now Charles University), founded in 1348, began providing pharmacotherapeutic chapters within the subject matter taught as part of General Pathology and Therapy in the 19<sup>th</sup> century. In the second half of that century the topic was covered within Medical Physiology and Medicinal Chemistry. The physiologist Professor Jan Evangelista Purkyně is credited with establishing pharmacology as an independent field of study in Czechoslovakia between 1867 and 1883. At that time, the forum for drug-oriented publications was *Časopis lékařů českých* (*Journal of Czech Physicians*), which has been published without interruption since 1861. In the period between World Wars I and II, i.e., after the establishment of an independent Czechoslovakia in 1918, the chief scientific forum for both physiologists and pharmacologists became the Czechoslovak Biological Society and its periodical *Biologické listy* (Biological Papers). At that time there were pharmacological institutes at the two Charles University Faculties of Medicine in Prague. In Brno there were separate departments of pharmacology at the Faculty of Medicine and the College of Veterinary Medicine, and there was a department at the Faculty of Medicine in Bratislava, Slovakia. The period after World War II witnessed significant growth of the discipline and in the number of departments in Czechoslovakia and throughout the world. A number of pharmacology institutes were established at new medical schools in Hradec Králové, Plzeň, Olomouc, Košice and Martin, at Schools of Pharmacy in Bratislava and Hradec Králové, and at the Veterinary College in Košice. Other pharmacological establishments were founded within the Czechoslovak Academy of Sciences (in Prague, Bratislava, and Hradec Králové), at the State Institute for Drug Control within the Ministry of Public Health, and in the research

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## CZECH SOCIETY FOR EXPERIMENTAL AND CLINICAL PHARMACOLOGY AND TOXICOLOGY

(continued)

laboratories of SPOFA, the nationally united pharmaceutical industry. Beginning in 1956, some larger hospitals, such as those in Prague, Plzeň, Bratislava, Brno, Ostrava, Hradec Králové, České Budějovice, and Olomouc began creating specialized clinical-pharmacological units.

At the time of its establishment, and during the existence of the federal state, over four hundred Czech and Slovak pharmacologists held membership in the Czechoslovak Pharmacological Society. From the very beginning the Society organized a series of at least annual pharmacology conferences called Československé Farmakologické Dny (Czechoslovak Pharmacological Days), very often with international participation.

In 1961, the Czechoslovak Pharmacological Society, on the initiative of Prof. Helena Rašková, was one of the associations that fostered the establishment of the IUPHAR. The Second World Pharmacological Congress (logo at right) thus took place in Prague in 1963 with more than 1600 participants.



In 1963, the Czechoslovak Pharmacological Society participated in the founding of the European Society of Drug Toxicity (the predecessor of EUROTOX). Some of the first European toxicological congresses took place in Prague (1967 and again in 1995) and Karlovy Vary (1974). Between 1975 and 1982, separate toxicology and clinical-pharmacology sections were established within the Czechoslovak Pharmacological Society. Before the political dissolution of Czechoslovakia, these sections organized 11 toxicological conferences and 12 clinical-pharmacological symposia entitled *Medicamenta Nova*.

While the Society was reorganized in 1993 to conform with the newly developed political territories, there continues to be close cooperation and collaboration between Czech and Slovak pharmacologists and toxicologists. The tradition of annual joint Czech-Slovak or Slovak-Czech Pharmacological Congresses has been maintained, with the 59<sup>th</sup> Congress having taken place this year. The joint toxicological and clinical-pharmacological conferences also continue, with the 14<sup>th</sup> Czech-Slovak toxicological conference held in 2009.

A number of internationally recognized scientists have emerged during the 150 year history of pharmacology in the Czech Republic. They and their achievements are detailed in the monograph "Farmakologické curriculum v Čechách a na Moravě" ("The Pharmacological Curriculum in Bohemia and Moravia"), published by Karolinum, Praha, 1998, and in the article "Od Purkyňových farmakologických pozorování k molekulárním lékovým interakcím" ("From Purkynje's Pharmacological Observations to Molecular

# CZECH SOCIETY FOR EXPERIMENTAL AND CLINICAL PHARMACOLOGY AND TOXICOLOGY

(continued)

Drug Interactions”) in the periodical *Česká a Slovenská Farmacie*, 1998, 47: 284-291. Some notables from the end of the 19<sup>th</sup> century, and during the first half of the 20<sup>th</sup> are Professors Karel Chodounský, a direct disciple of Professor Purkyně, Kamil Josef Lhoták, Alois Velich, Bohuslav Bouček, Otakar Rybák, Emil Starkenstein, Bohuslav Polák, Jaroslav Lebduška, Zdeněk Köcher, and Jiří Štefl.

The initiator of the postwar development of Czech and Slovak pharmacology was Helena Rašková (see page 4 to read the letter from Dr. Rašková). Now 96 years old, Dr. Rašková is Honorary Chair of the Czech Pharmacological Society. Thanks Dr. Rašková, even in the era of the political Iron Curtain, Prague was the meeting place for distinguished pharmacological personalities from various geographical territories and for dozens of Czech and Slovak pharmacologists even during the turmoil of the Cold War era. Her efforts led to many long-term affiliations and collaborations between Czech laboratories and research institutes in North American, Western Europe, and Japan. Many of



Prof. Helena Rašková (right) and the author, Prof. Dr. Jaroslav Květina, DrSc. (left) in 1987.

those from the first and second postwar generations of scientists managed to establish their own independent pharmacology laboratories either at home or abroad. Among those based originally in Czechoslovakia were the laboratories of Professors Zdeněk Votava, Jiří Vaněček, Václav Trčka, Vojtěch Grossmann, Max Wenke, Miroslav Mráz, Jiří Lenfleď, Olga Benešová, Zdena Horáková, Ivo Janků, Jaroslav Květina, Jiří Elis, Radan Čapek, Vladislav Eybl, Karel Mašek, Sixtus Hynie, Jaroslav Jezdinský, Otakar Gulda, Miloslav Kršiak, Jan Švihovec, and Ladislav Volicer. Among the clinical pharmacology laboratories are those of Drs. Zdeněk Modr and Lambert Klabusay.

Today, the Czech Society for Experimental and Clinical Pharmacology and Toxicology, within the organizational framework of the Czech Medical J. E. Purkyně Society, has over 230 members. The Society is directed by an Executive Committee composed of:

Vladimír Geršl  
Chair

František Perlík  
Vice-Chair

Pavel Anzenbacher  
Secretary

Josef Šedivý  
Treasurer

Members  
Milan Grundmann  
Miloslav Kršiak  
Jaroslav Květina  
Jiřina Martínková  
Milan Nobilis  
Zdeněk Zídek

Together these, and other groups of Czech educators and scientists, have trained generations of pharmacologists, many of whom are now leaders in the field. ●

Jaroslav Květina  
Institute of Experimental Biopharmaceutics, Hradec Králové



# Milestone Anniversaries

## 50<sup>TH</sup> ANNIVERSARY OF THE INDEPENDENT PHARMACOLOGICAL SOCIETIES IN BOHEMIA AND SLOVAKIA Slovak Pharmacological Society (SFaS)

The origins of the Slovak Pharmacological Society (SFaS) are nearly identical to those of IUPHAR. When IUPHAR was established in 1959 as the Section of Pharmacology of the International Union of Physiological Sciences, so was the Czechoslovak Society for Pharmacology. When the Czech and Slovak Republics became independent at the end of 1992, the society was renamed the Slovak Pharmacological Society.



Despite the name change and political separation, the SFaS has remained a vibrant organization over the past half-century. Its charter encourages the exchange of scientists and ideas in pharmacology while offering a unified voice for its members in local government and abroad in regional and international scientific communities. Education is promoted by the Society in a variety of ways, including sponsorship of seminars for pre- and post-doctoral pharmacology trainees, and workshops and satellite conferences at the annual meetings. The SFaS membership consists of approximately 200 pharmacologists. SFaS communicates regularly with its members through its website (<http://www.sfarm.sk>), and at various conferences held throughout the year.

The annual meetings, held in close cooperation with the Czech Society for Experimental and Clinical Pharmacology and Toxicology, date back to 1952. SFaS collaborates frequently with the Slovak Society of Clinical Pharmacology and other societies of the Slovak Medical Society. Another important alliance is the Medical Faculties NETwork (MEFANET). This organization is designed to strengthen cooperation among the Czech and Slovak medical faculties with regard to the education of medical and healthcare professionals.

A major reason for the long-term success of SFaS is the support it has received from the five University departments of Pharmacology and two Institutes of Pharmacology in the Slovak Republic. Included in this group are:

- Faculty of Medicine, Comenius University in Bratislava
- Jesenius Faculty of Medicine, Comenius University in Martin
- Faculty of Medicine, Pavol Jozef Šafárik University in Košice
- Pharmaceutical Faculty, Comenius University in Bratislava
- University of Veterinary Medicine in Košice
- Institute of Experimental Pharmacology, Slovak Academy of Sciences in Bratislava
- State Institute of Drug Control in Bratislava

Meetings organized by SFaS for 2010 include the 27<sup>th</sup> Medicamenta Nova, 16<sup>th</sup> Kovalčík Day focused on news in pharmacology, and the 15<sup>th</sup> Memorial of prof. MUDr. F. Švec, DrSc. – The Day of Young Pharmacologists. •

Soňa Fraňová  
Comenius University in Martin



Comenius University



Pavol Jozef Šafárik  
University



University of Veterinary  
Medicine



Institute of Experimental  
Pharmacology &  
Toxicology of the Slovak  
Academy of Sciences

# Milestone Anniversaries

## THE AMERICAN COLLEGE OF CLINICAL PHARMACOLOGY AT 40

Committed to Improving Health by Optimizing Therapeutics

*All things are poisons  
and there is nothing that is harmless,  
the dose alone decides that something is no poison.*

Paracelsus (1493-1541)



As an alchemist and physician, Paracelsus (portrait at right) made innovative advances in medicine and therapeutics<sup>1</sup>. Not only did he pioneer the therapeutic use of chemical and minerals in modern medicine, he also introduced the concept of dose response. His observations remain relevant to the discipline of modern clinical pharmacology. Today, 40 years after its founding, the American College of Clinical Pharmacology (ACCP), a premier professional society for the discipline of clinical pharmacology, supports and expands upon these fundamental principles.

### Modern Legislation Creates a Need for Clinical Pharmacologists

Passage of the Pure Food, Drug and Cosmetic Act in 1938 and the Kefauver-Harris amendment in 1962 established a new era with the regulatory authority of the Food and Drug Administration (FDA)<sup>2</sup>. To obtain FDA approval, drugs must now demonstrate substantial evidence of not only safety but also efficacy. These new regulatory requirements created a need for well-trained clinicians/scientists to design and direct the required drug studies, particularly clinical trials.

### Establishment of Clinical Pharmacology as a Discipline

The need to establish clinical pharmacology as a distinct discipline and to train clinical pharmacologists became quickly apparent. In 1963 several prominent pharmacologists and clinicians came together to found the American College of Clinical Pharmacology and Chemotherapy (ACCPC)<sup>3</sup>. In addition to Dr. Harry Gold, well known for his efforts to identify principles to provide a rational basis for drug therapy, they included Duncan Hutcheon, Nathaniel Kwit, McKeen Cattell and Benjamin Calesnick. Soon thereafter, the ACCPC merged with the American Therapeutics Society (ATS). As described by Dr. Gold, the merger changed the focus of the society from drug oriented clinical pharmacology to patient centered therapeutics, which he regarded as completely distinct disciplines<sup>4</sup>.

### Founding of the American College of Clinical Pharmacology

Disenchanted with the change in direction and move away from a scientific orientation and from emphasis on the training of clinical pharmacologists, Drs. Gold, Calesnick, Hutcheon, Cattell and Kwit joined together again to form the American College of Clinical Pharmacology (ACCP). With their foresight into the training, research and educational needs of the developing discipline of clinical pharmacology, they may be considered as the founding fathers of the ACCP. The College was incorporated on September 11, 1969 in the District of Columbia, listing Drs. Hutcheon, Cattell and Gold as the first Board of Directors. As noted in the articles of incorporation, the College was “to promote and advance the science of clinical

# AMERICAN COLLEGE OF CLINICAL PHARMACOLOGY

(continued)

pharmacology in all its phases, to establish high standards of clinical investigation in this field of endeavor, to issue publications for these purposes and to engage in other appropriate educational efforts.<sup>5</sup>

The cofounders envisioned the College as an umbrella organization including many areas of expertise that were tangential to or supported the discipline of clinical pharmacology. At their first meeting Dr. Hutcheon envisioned a membership of clinicians and others in biomedical disciplines, whose knowledge was critical to the development of clinical pharmacology. Under the auspices of the College, Dr. Calesnick continued to lead efforts for the education and training of clinical pharmacologists in American medical schools.

With Dr. Hutcheon (photograph at right) as the first president, they established a charter group of around 50 Fellows by invitation followed by the election of over 50 additional Fellows. The 1<sup>st</sup> Annual Meeting of the College was held on April, 1972 in Atlantic City, New Jersey. Workshops were held on topics including the most recent research in drug utilization, education in the basic tenets of clinical pharmacology and training of those new to the discipline. In September, 2009 the College held its 38<sup>th</sup> Annual Meeting in San Antonio, Texas. The format of that first meeting continues to provide structure for the College's Annual Meetings today.



## ***The Journal of Clinical Pharmacology***

Publication of scientific and educational advances in the discipline was a founding principle of the College. By 1970 a publications committee was formed and *The Journal of Clinical Pharmacology (JCP)* became the official publication of the College. In January 1976 Dr. Cattell donated the *Journal* to the College. Today the *JCP* ranks in the top 26% of journals in the fields of pharmacology and pharmacy. It continues to serve as the voice of the ACCP and to publish original research, review articles, and commentaries on topics of interest to the clinical pharmacology community including all phases of drug development from pharmacokinetics to pharmacodynamics.

## **American Board of Clinical Pharmacology**

Partially to address the lack of recognition of clinical pharmacology as a medical specialty, Dr. Calesnick proposed board certification of clinical pharmacologists as early as 1962. Shortly after the founding of the College, Dr. Joe DiPalma made a strong case for board certification<sup>6</sup>. Dr. Hutcheon took up the challenge and founded the American Board of Clinical Pharmacology in 1976. By 1970 at the instigation of Dr. Elliot Vessel, both the American Society for Pharmacology and Experimental Therapeutics (ASPET) and the American Society for Clinical Pharmacology and Therapeutics joined the deliberations to form a Tripartite Task Force. However, in 1985 the American Board of Medical Specialties rejected the proposal for a sub-specialty board in clinical pharmacology under the auspices of internal medicine. Soon thereafter, the Task Force purchased the Board from ACCP, administered its first examination in 1988 and continues to do so to this day.

*Continued on page 49...*

# AMERICAN COLLEGE OF CLINICAL PHARMACOLOGY

(continued)

## Governance of the College

Today the College is governed by a Board of Regents. Membership in the College includes Students, Members, Associate Members, Fellows and Honorary Fellows. Honorary Fellows are recognized for their outstanding achievements and contributions to the discipline of clinical pharmacology. Fellows are elected by the Board of Regents from among candidates who hold doctoral degrees in disciplines related to clinical pharmacology, have more than 3 years experience in the discipline, show evidence of meritorious work and are recommended by at least two Fellows. Fellows are eligible to stand for election as Regents, who are elected by all voting members and Fellows. Officers are elected by the Regents from among current and past Regents.

## Today - The College at 40

Today the ACCP remains a premier professional society for the discipline of clinical pharmacology. The College embodies the same principles and structure as its founding fathers. The College has as its mission providing innovative leadership and interdisciplinary education that will enable the generation, integration and translation of scientific knowledge to optimize research, development and utilization of medical for the benefit of all.

The College supports diversity in its membership and leadership drawing members from clinical practice, academic research and medicine, the pharmaceutical industry and government. A balance of elected Regents and Officers from all pertinent professional backgrounds ensures that the College remains attuned to the needs of all professionals engaged in the practice of clinical pharmacology, from the research laboratory (academic and industrial) to the classroom, and from the clinical trial to improved patient care. With an emphasis on education, annual meetings continue to support the discipline and to educate others.



40th Anniversary celebration at the 38th Annual Meeting on September 12, 2009. Pictured from Left to right: Past President Barry Dvorchik, Ph.D. (1992-94); Current President Michael D. Reed, Pharm.D. (2008-2010); Gail Colburn (Widow of Past President Wayne A. Colburn, Ph.D. (2002-2003); President Elect Michael J. Fossler, Pharm.D., and Immediate Past President Hartmut Derendorf, Ph.D. (2006-2008)

On the occasion of the College's 25<sup>th</sup> anniversary, the Board of Regents retreated for a strategic planning session which created both a vision and mission statement for the College<sup>7</sup>. Commensurate with its 40<sup>th</sup> anniversary, the College updated its strategic plan. The Vision and Mission Statements were revisited to include a definition of clinical pharmacology (inset on page 48).

*Continued on page 50...*

# AMERICAN COLLEGE OF CLINICAL PHARMACOLOGY

(continued)

## *Vision and Mission Statements of the ACCP*

(found on [www.accp1.org](http://www.accp1.org))

**Vision:** To improve health by optimizing therapeutics

**Mission:** Provide innovative leadership and interdisciplinary education that will enable the generation, integration and translation of scientific knowledge to optimize research, development and utilization of medication for the benefit of all.

## Clinical Pharmacology Defined

- Promotion of rational use of medications in humans
- Innovative research, development and regulation of medications
- Education of health care professionals and patients on the optimal utilization of medications

A key facet of the plan was to create a new position of Chief Executive Officer to provide the public face of the College. On September 13, 2009 at the annual meeting, Stephen Keith, M.D., MSPH (photograph at right), was introduced as the first CEO of the College. Dr. Keith will work with the College's Board of Regents toward the achievement of its mission to advance the science of clinical pharmacology in all its phases. His mandate will include implementation of the College's recently developed Strategic Plan to expand membership, increase revenues, manage the communication of the vision, policies and positions of the College and educational outreach efforts in the discipline of clinical pharmacology<sup>8</sup>.



The appointment of Dr. Keith as CEO ushers in a new era at the College. Yet the College and its members remain committed to its core principles, promoting the more rational use of medicines. •

Patricia B. Williams  
Eastern Virginia Medical School

Acknowledgements: The author expresses appreciation for the historical materials of the College assembled by Alphonse Ingenito, PhD, FCP, Claire M. Lathers, PhD, FCP, John Wilson, MD, FCP and Susan Ulrich, RPh.

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# Milestone Anniversaries

## **The History of Pharmacology in Croatia and the 30th Anniversary of the Croatian Pharmacological Society**



While the idea of a Croatian union of pharmacologists is not new, enthusiasm for the concept has ebbed and flowed over the years because the larger national societies at times failed to appreciate the need for smaller organizations to serve as a vehicle for establishing international ties. However, it is now generally appreciated that Croatian pharmacologists must work together more closely to promote and advance pharmacology, toxicology and ancillary sciences. Because of this need, there is renewed interest and enthusiasm in supporting the Croatian Pharmacology Society.

The first Croatian pharmacologists were students of Oswald Schmiedeberg (1838–1921), Director of the Institute of Pharmacology in Strasbourg. Dr. Schmiedeberg was responsible for introducing the German tradition to Croatian pharmacology. The Department of Pharmacology at the University of Zagreb School of Medicine was established in 1919. At that time Croatia was part of the Austro-Hungarian Monarchy. The first department head was Miroslav Mikuličić, a former assistant in the Department of Pharmacology in Graz. Later department chairs included Ivo Ivančević, author of the first Croatian pharmacological textbook (1948), Zlatko Supek, and Veljko Gjuriš (up to 1991). Some of the more notable members of this department in recent years were Ester Kunec-Vajić, Juraj Geber, Zdravko Lacković, Marin Bulat, and the chair, Vlasta Bradamante. Many who played important roles in the development of pharmacology throughout the region were educated and worked in the Department of Pharmacology in Zagreb. Members of this group include Pavao Štern, the founder of the Department of Pharmacology at the University of Sarajevo School of Medicine, Dragutin Tomić the founder of Department of Pharmacology at the University of Zagreb, Stevan Milković, the head of the Department of Pharmacology at the University of Zagreb School of Pharmacy and Biochemistry, Pavao Sokolić, founder of the Department of Pathophysiology at the University of Zagreb School of Medicine, and Petar Lenče, founder of the Department of Pharmacology at the University of Ljubljana School of Medicine. Also included in this group are Eugen Cerkovnikov, founder of the Department of Chemistry and Biochemistry at the University of Rijeka School of Medicine, and Dušan Davila, Professor of Pharmacology at the University of Priština School of Medicine. Therefore, not only is the Department of Pharmacology at the University of Zagreb the oldest and most prominent in Croatia, it has played a leading role in establishing the discipline in this part of the world. By the mid-1970s, when demands were being made for pharmacology to enhance its identity and image, four additional institutions joined together in establishing the Croatian Pharmacological Society (CPS).

Pharmacology was first employed in Croatian industry by Vladimir Prelog, who subsequently was awarded a Nobel Prize. This laboratory was established at Kaštela (Pliva) in 1936. However, it wasn't until a decade later that Pavao Štern acknowledged that the Prelog effort represented the beginning of industrial pharmacology in Croatia. In the late 1940s pharmacology laboratories were established in Zagreb at the Ruđer Bošković institute and at the Institute for Medical Research and Occupational Health. The Department of Pharmacology at the University of Rijeka School of Medicine was founded in 1958 by Professor Dimitrije Atanacković. Prior to that Dr. Atanacković was chair of Pharmacology at the University of Skopje Medical School. Professor Ante Simonić became department chair at Rijeka in 1985, succeeding Dr. Atanacković. Of historical interest is the fact that Antonio Grossich (1849-1926) first introduced to surgery the use of tincture of iodine on intact skin in Rijeka, and Leo H. Sternbach, the inventor of the benzodiazepines, was born in 1908 in Opatija, a neighboring village. Opatija was also a favorite retreat for Otto Loewi, a Nobel laureate.

## Croatian Pharmacological Society (continued)

Throughout most of the 20<sup>th</sup> century, pharmacologists would meet as members of the Croatian Society of Physiologists. This arrangement changed on 8 February 1979 with the establishment of an independent pharmacology society. The new organization welcomed as members all those interested in pharmacology and related disciplines. The group included physicians, pharmacists, biochemists, veterinarians, biologists and other experimental scientists and clinicians. As Croatia was still part of Yugoslavia at this time, the Croatian Pharmacology Society (CPS) joined IUPHAR as part of the Union of the Yugoslav Pharmacological Societies. Although the CPS functioned independently, it played a significant role in the activities of the Union. In 1979, the CPS organised the Yugoslav Pharmacology Meeting in Zadar, which included all scientists working in pharmacology and related fields throughout Yugoslavia. The CPS also sponsored annual pharmacology meetings in Zagreb that included distinguished outside speakers as well as oral and poster presentations by its members. The Society has always acknowledged the importance of publishing the proceedings of its meetings. This task fell to the organising committee of the host department in Zagreb, which produced the material in various formats.

The first elected president of CPS was Veljko Gjuriš (up to 1982) from the Department of Pharmacology University of Zagreb. His successors were Marin Bulat (up to 1985), Juraj Geber (up to 1988), and Ante Simonić (up to 1992) from the Department of Pharmacology, University of Rijeka.

Pharmacology in Croatia has thrived over the past 30 years thanks in part to the efforts of these individuals and the CPS. Several new departments and laboratories were established during this period, fostering the recruitment of young scientists who brought new technologies to the field. Among the new departments are those at the medical schools at the University of Split and the University of Osijek. Department heads selected to lead some of these new units include Professors Mladen Boban and Ante Tvrdeić.

Following the dissolution of Yugoslavia, CPS left the Union of the Yugoslav Pharmacological Societies and became an independent member of IUPHAR in 1994 and a member of EPHAR in 1995.

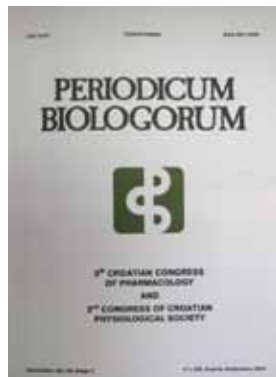
The Croatian Pharmacology Society is a professional, non-governmental, voluntary, non-profit association of Croatian pharmacologists. Since its establishment, the mission of the Society has been to advance research and education in pharmacology and related disciplines in Croatia, and to encourage international co-operation and free exchange of scientists and ideas. Many Croatian pharmacologists have received their training abroad in the United States, Germany, England, France, Belgium, The Netherlands, Finland, Sweden, Italy, Austria and Canada.

The CPS is an advocate for the promotion of research and development of basic and clinical pharmacology and provides forums for the presentation and discussion of research findings. Besides undertaking and supporting activities aimed at maintaining the discipline, the CPS represents the field in discussions with governmental organizations and international bodies.

*Continued on page 53...*

## Croatian Pharmacological Society (continued)

In an effort to strengthen the association between pre-clinical and clinical pharmacologists, the CPS organizes joint congresses of Croatian pharmacologists about every four years. The first that was held in Zagreb in 1993, followed by those in Rijeka (1997), Zagreb (2001), Split (2004), and Osijek (2007).



The official journal of the Union of the Yugoslav Pharmacological Societies was *Yugoslavica Physiologica and Pharmacologica Acta*. Since 1997, the CPS has sponsored *Periodicum Biologorum* (indexed in Excerpta Medica), pictured at left.

The CPS is governed by a Council that elects an Executive Committee composed of a President, Vice-President, Secretary, and Treasurer. The Council establishes and oversees various *ad hoc* committees, such as the Committee for Pharmacology Education and the Committee for the English-Croatian Pharmacological Dictionary. The more recent presidents of the CPS were M. Bulat (up to 1995), A. Simonić (up to 1998 and in 2008), Z. Lacković (up to 2002), M. Boban (up to 2004), and Marijan Klarica (up to 2007). The current president is Gordana Župan, head of the Department of Pharmacology at the University of Rijeka School of Medicine.

The unique aspect of pharmacology is its involvement in diverse activities, from the molecular sciences to patient care and the rational use of drugs. This breadth of interests has driven an increase in CPS membership to approximately 150 individuals. While it is beyond the scope of this presentation to enumerate all of the pharmacology studies being conducted in laboratories throughout Croatia, suffice to say that the international reputations established by many Croatian pharmacologists demonstrates the value and originality of their work. Although the CPS is proud of its past accomplishments, the Society looks forward to continuing its efforts aimed at fostering this multifaceted discipline for the betterment of mankind. To this end, emphasis will continue to be placed on supporting the development of younger scientists as they forge their careers in this exiting, dynamic, and important field. ●

Ante Simonić\* and Juraj Geber\*\*

\*University of Rijeka

\*\*University of Zagreb



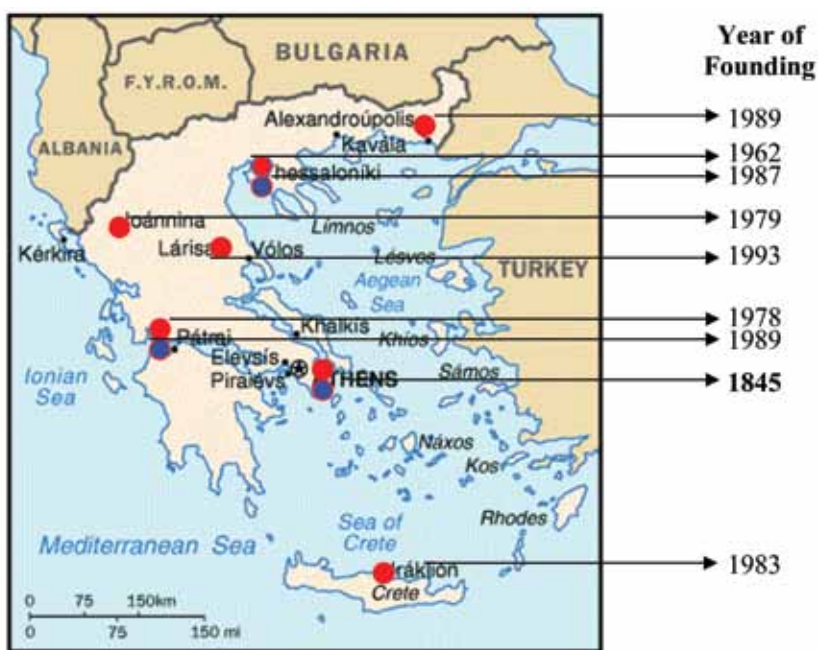
The 6th Croatian Congress of Pharmacology with International Participation will be held in Opatija, September 15-18, 2010.

# Milestone Anniversaries

## The 25th Anniversary of the HELLENIC SOCIETY OF PHARMACOLOGY

The Hellenic Society of Pharmacology (HSP) celebrates its 25th Anniversary this year. In commemoration of this event we would like to present a brief history of the Society. In this regard it is interesting to remember that the term "Pharmacology" is derived from the Greek words *pharmakon*, meaning a drug or medicine, and *logos* meaning the truth about or a rational discussion.

Founded in 1984, the Hellenic Society of Pharmacology was established once there was a critical mass of professional pharmacologists in the country. A role model for pharmacologists, as well as for other scientists in Greece, was Professor G. Ioakeimoglou, who was first elected professor of pharmacology at the Medical School in Athens in 1928. After completing his studies in Germany, Professor Ioakeimoglou worked with Professor Heffter, whom he succeeded at the University of Berlin in 1922.<sup>1</sup> Professor Ioakeimoglou was highly respected in the pharmacological community of the time, both in Europe and the United States. He was a particularly talented instructor and creator of pharmacological techniques and methodologies. He had a profound influence on several generations of physicians and scientists until his retirement in 1963. Indeed, many of the first professors in new departments of pharmacology in Greece were his students.



The pharmacology departments that comprise the core of the HSP are depicted at left.

Currently there are nine Greek departments of pharmacology, seven of which are located in medical schools, and two in schools of pharmacy. The oldest Greek medical school is at the University of Athens, which was established in 1837, and the newest is in Thessaly.

Location and year of founding of the Departments of Pharmacology in Greece

- Departments of Pharmacology in Medical Schools in Greece
- Departments of Pharmacology in Schools of Pharmacy in Greece

The idea for establishing the Hellenic Society of Pharmacology originated during an IUPHAR congress when M. Marselos, professor at the University of Ioannina, realized that a national society was needed to become a member of the Union. As Greece at that time had no national organization, Professor Marselos discussed the problem with two colleagues attending the meeting, C. Spyraiki and Z. Daifoti, from the University of Athens. All agreed to work on establishing a national society, an idea that was enthusiastically embraced by their colleagues in Greece.

Continued on page 55...

# HELLENIC SOCIETY OF PHARMACOLOGY (continued)

On March 29<sup>th</sup>, 1984 the HSP was officially founded by 21 pharmacologists, all of whom were faculty members at Greek medical schools. Twelve were from Athens, four from Thessaloniki, and three each from Ioannina and Patras. While most of the founding members are now retired, they continue to be very active in the HSP. Six of the 21 founding members have passed away: D. Varonos, M. Kouvaris and C. Spyraiki from the medical school in Athens, A. Paradellis and G. Logaras from Thessaloniki, and C. Triantafyllides from Alexandroupolis.

The Hellenic Society of Pharmacology is a nongovernmental organization supported by its members and donations. The objectives of the Society are to promote the development of pharmacology by supporting research in the field, encouraging national and international collaborations, and enhancing teaching programs in the discipline for medical, dental and pharmacy students. To achieve these goals the HSP organizes and sponsors congresses, seminars and lectures. It is also involved in the establishment of postgraduate studies, and in disseminating authoritative information to the pharmacology community and general public.

The Executive Committee of the HSP is elected by the General Assembly for two year terms. The Committee consists of seven members, including the president, vice-president, secretary-general, treasurer and three councilors. The first president of the Society was the late C. Spyraiki and the first vice-president was Z. Daifoti from Athens. Professor Spyraiki was succeeded by M. Marselos, professor of pharmacology at the University of Ioannina Medical School, with Professor M. Konstandi from the same institution serving as vice president/secretary-general. During its initial decade of existence, the HSP was able to only sponsor a limited range of activities, including a few independent and joint meetings with other scientific societies.

Under the leadership of Professor M. Maragoudakis of the University of Patras and J. S. Papadopoulos of the University of Athens, the 1<sup>st</sup> Panhellenic Congress of Pharmacology was held in Athens in 2000. As Greek pharmacologists worked in virtual isolation up to that time, this meeting represented a milestone in the history of the HSP. Thanks to the initiative of J. S. Papadopoulos, the 1<sup>st</sup> Panhellenic congress was the real first general meeting of all the Greek pharmacologists. The delegates were drawn mainly from medical and pharmacy school faculties. By 1999 there were three more medical schools established in Creta, Thrace and Thessali, for a total of seven, and three departments in schools of pharmacy, which are located in Athens, Thessaloniki, and Patras. The following year a national meeting on drug safety was held. These events signaled a new beginning for the Society. Since then, a Congress of Pharmacology has been held in Greece that includes participants from around the world. In alternate years a smaller one-day meeting is sponsored that includes one or two distinguished European scientists who are invited to present lectures. The national meeting provides an opportunity for Greek pharmacologists and younger scientists to exchange ideas and information about scientific collaborations and to promote education and research in the field.

The second Panhellenic Congress of Pharmacology (2002), organized during the presidency of K. Thermos, now professor of pharmacology at the University of Creta, was a highly successful. Among other distinguished scientists, Professor F. Kafatos, president and chairman of the Scientific Council of the ERC, presented a plenary lecture. Two more successful congresses were held in the succeeding four years during the presidency of G. Karakioulakis, professor of pharmacology at the Thessaloniki Medical School. One took place in Thessaloniki (2004) and the other in Patras (2006). Two national meetings in Athens during this time also helped to increase the visibility of the HSP and to firmly establish its credentials among other scientific societies.



During the 2006 IUPHAR meeting in China, Greece became an elected member of the EPHAR Executive Committee. C. Liapi, associate professor of pharmacology at the University of Athens Medical School, was elected to the EPHAR Executive Committee, and re-elected in 2008 at a meeting in Manchester for an additional four year period. Professor M. Goethert (pictured at left) was the first president of EPHAR to be invited by the Hellenic Society of Pharmacology to present a lecture at the 2007 national meeting in Athens. Professor Goethert was invited again to open the 5<sup>th</sup> Panhellenic Congress in 2008 in Athens and to give a plenary lecture at that meeting.

# HELLENIC SOCIETY OF PHARMACOLOGY

(continued)



Professor E. Moilanen (photograph at left), the new president of EPHAR, and Professor F. Nijkamp (photograph at right), editor-in-chief of the *European Journal of Pharmacology*, were the invited speakers at the national meeting of the Society in 2009 in Athens. Besides coverage of topical issues in experimental basic



and clinical pharmacology, these society meetings include presentations on specialized subjects, such as pharmacovigilance and pharmacoecconomy in an attempt to foster a better understanding of the issues involved in moving new drugs into the market.

This year the 7<sup>th</sup> EACPT Summer School was held at the University of Alexandroupolis. This event was organized by V. Manolopoulos, the HSP delegate to the EACPT, in collaboration with the president of EACPT, Professor I. Cascorbi. Thus, Society activities continue to increase, with the involvement of virtually every pharmacology department in Greece.

Given the importance of education in the HSP mission, it is included on the program at all national congresses. For example, at the 5<sup>th</sup> Panhellenic Congress in 2008, Doctor S. Maxwell (EACPT), along with other European and American scientists, participated in an EPHAR sponsored round table discussion on pharmacology education. While several postgraduate courses in basic and clinical pharmacology have been established in Greece, the creation of a Diploma in Pharmacology, an objective of the HSP, has yet to be realized.

To further discovery in the field and to foster dissemination of these findings to the community at large, the HSP routinely sponsors specialized discussion groups for scientists and laymen around the country. Subjects covered in these sessions have included rational prescribing and what a consumer should know about drugs.

Currently the HSP has approximately 300 members, around 50 of whom are faculty members in schools of medicine, pharmacy and dentistry. International interactions between the HSP as a group and individual members, have flourished in recent years. The current Executive Committee consists of four physician-scientists, one biologist and one pharmacist. Specifically, this group includes President C. Liapi, MD of the University of Athens; Vice-President M. Marselos, MD of the University of Ioannina; Secretary-General D. Kouvelas, MD of the University of Thessaloniki; and Treasurer E. Papadimitriou of the University of Patras. Other members are N. Drakoulis, MD, of the University of Athens, E. Manolopoulos of the University of Alexandroupolis, and N. Sakellaridis, MD of the University of Thessali.

The majority of HSP members actively participates at European and overseas pharmacology meetings, both clinical and basic. Many Greek pharmacologists participate on medication-related European Committees. The many international collaborations and publications by HSP members in primary journals demonstrate that quality of pharmacology research in Greece and the contributions that Greek scientists make to the discipline.

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# HELLENIC SOCIETY OF PHARMACOLOGY (continued)

As the Society grows, and its members are drawn from different fields, a newsletter covering a wide range of topics related to drugs and their uses is under development. This communication will be soon distributed to members of the HSP and related scientific societies.

In 2000 J. S. Papadopoulos, secretary general of the HSP, established the Museum of Pharmacology in the Department of Pharmacology at the University of Athens. The achievement was made possible, in part, by a grant from two bookstores, and the hard work of Professor Papadopoulos. The museum houses a collection of old research instruments, many of which date back to the early 19<sup>th</sup> century, and a large collection of plants from the period of Professor Ioakeimoglou.



(above) On display are the rhizomes, leaves and seeds of plants that were the basis for many drugs



(above) A drug prospectus, published in 1929, of heroine as a cough medication



(at right) Ovens: The one to the left was probably used at the beginning of the 20th century



Three different old models of centrifuges



Panoramic view of the museum

In summary, while the Hellenic Society of Pharmacology is flourishing, much work remains. We look forward to these challenges. ●

Charis Liapi  
Medical School of the University of Athens

<sup>1</sup> Although drugs had already been the subject of past civilizations, which contributed to our knowledge of drugs, it was in the German speaking universities, during the second half of the 19th century that pharmacology really began to emerge as a well-defined discipline



# 2010 Anniversaries

**IUPHAR congratulates  
the following member societies:**

American Society for  
Clinical Pharmacology and Therapeutics  
1900-2010

German Society for Experimental and  
Clinical Pharmacology and Toxicology  
1920-2010

Danish Society of  
Pharmacology and Toxicology  
1945-2010

Armenian Pharmacological Society  
1960-2010

Polish Pharmacological Society  
1965-2010

Swiss Society of Pharmacology and Toxicology\*  
1965-2010

Spanish Society of Clinical Pharmacology  
1985-2010

Federation of European Pharmacological Societies  
1990-2010

Austrian Pharmacological Society  
1995-2010

Cuban Society for Pharmacology  
1995-2010

International Society of Pharmacovigilance  
2000-2010

Safety Pharmacology Society  
2000-2010

*\*ERRATUM: Inadvertently printed as 1979-2009 in the December 2008 issue of Pharmacology International.*

# Meeting Reports

## IOSP SCHOOL FOR AFRICA 2009 IN SOUTH AFRICA

The Integrative and Organ Systems Pharmacology (IOSP) Committee of IUPHAR, under the chairmanship of Professor David Bylund, received a grant from the International Council of Sciences (ICSU) of €30,000 to hold three workshops on experimental pharmacology in Africa during 2009 and 2010. At a meeting of the IOSP committee, held during the 2009 IUPHAR Executive Committee meeting and African Summit in Cairo, Egypt it was decided the first of the three workshops would be held in South Africa.

The South Africa IUPHAR-IOSP workshop was held as a pre-conference satellite meeting on 18-22 September 2009 prior to the 5th International Congress of Pharmacological and Pharmaceutical Sciences (ICPPS) held 23-26 September 2009 in Potchefstroom, South Africa. This arrangement allowed the IOSP delegates to attend the ICPPS congress as well. The workshop was hosted by the North-West University in Potchefstroom, the host of the 5th ICPPS congress. Additional financial support for this IUPHAR-IOSP workshop was contributed by the North-West University, the South African National Research Foundation and the South African Society for Basic and Clinical Pharmacology. The South Africa IOSP workshop focussed on central nervous system (CNS) assays employed for drug discovery.

Professor Christiaan Brink was chair of the workshop organising committee. The four-day programme included lectures and laboratory exercises. The topics covered animal models for CNS drug testing, research ethics, report writing, and data management and analysis. There was also discussion of traditional medicine research techniques. In addition, one of the delegates, a laboratory animal technician from Kenya, spent time visiting the Lab Animal Centre in Potchefstroom to learn more about SOPs, standards for accreditation, and general centre management. There was an excellent mix of junior and senior pharmacologists amongst the delegates. One aim of the program was to “train-the-trainer” so these individuals could offer instruction at their home institutions for maximal sustainable impact.

Instruction was provided by Professor David Bylund from the University of Nebraska and six experts from South Africa. In addition, two laboratory animal technicians from North-West University offered training in animal handling and experimental techniques. Five delegates from Kenya and three from Nigeria attended the workshop, in addition to postgraduate students of South Africa. ●

Christiaan B. Brink  
North-West University



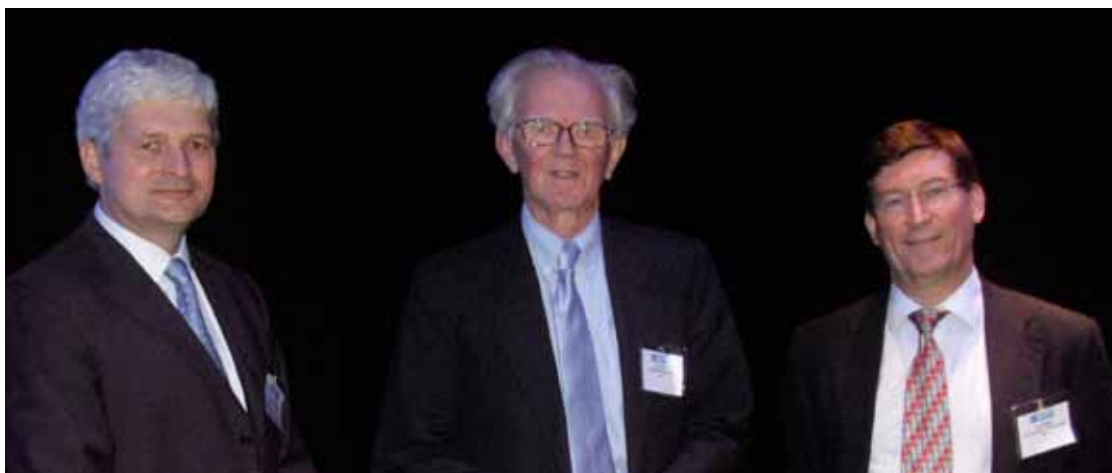
Delegates from Kenya & Nigeria attending the IOSP School for Africa 2009 in Potchefstroom, South Africa, as well as some of the South African Students and presenters. Back row L→R: James Akindele (Nigeria), Nico Liebenberg (South Africa), Prof. Brian Harvey (South Africa), Daniel Karume (Kenya), Dr. Peter Mwangi (Kenya), Prof. Tiaan Brink (South Africa), Prof. Linda Brand (South Africa), Dr. Charles Githinji (Kenya), and Riaan Reay (South Africa). Front row L→R: Prof. Funmi Adeyemi (Nigeria), Flora Aigbe (Nigeria), Prof. David Bylund (USA), Dr. Jesca Okwara (Kenya), and Dr. Faith Okalebo (Kenya).

## Meeting Reports

### 9<sup>th</sup> Congress of the European Association for Clinical Pharmacology and Therapeutics



The 9<sup>th</sup> Congress of the European Association for Clinical Pharmacology and Therapeutics (EACPT2009) was held in the heart of Scotland's capital city at the Edinburgh International Conference Centre between 12<sup>th</sup> and 15<sup>th</sup> July 2009. Almost 1000 scientists from over 50 countries (including many from outside of Europe) participated in the meeting, making it a truly international congress. We were especially delighted with the large number of delegates from smaller countries where clinical pharmacology as a specialty is perhaps not as strong as in the larger European countries. Four outstanding plenary lectures on the future of clinical pharmacology by Sir Colin Dollery, Patrick Vallance, Garret FitzGerald and Alastair Wood were the highlights of a memorable and high quality scientific programme.



EACPT president, Professor Ingolf Cascorbi (on left) and EACPT 2009 president, Professor David Webb (on right) with the meeting's first plenary speaker, Professor Sir Colin Dollery (in center).

Virtually all areas of clinical pharmacology and therapeutics were covered during the meeting. Included were symposia on clinical pharmacology in Eastern Europe and the Nordic countries, and the British Pharmacological Society (BPS) sponsored symposium on working with patients. In addition, the Federation of European Pharmacological Societies (EPHAR) sponsored lecture by Professor Juan Tamargo was extremely well received and served to make the programme even more exciting and international.

*Continued on page 61...*

# 9<sup>th</sup> Congress of the European Association for Clinical Pharmacology and Therapeutics (continued)



The meeting's two big winners – Professor Laurie Prescottt (on left) and Professor Folke Sjöqvist (on right).

Other highlights included Professor Folke Sjöqvist being awarded the EACPT Lifetime Achievement Award and Professor Laurie Prescottt receiving both an Honorary Fellowship of the BPS and Honorary Membership of the Swedish Society of Clinical Pharmacology.

The science was complemented by a range of social events, including a Welcome Reception at Edinburgh Castle and the Conference Dinner, with Scottish dancing (a *ceilidh*), at Our Dynamic Earth.



EACPT 2009 chairman, Professor Simon Maxwell with the city behind him (at left) during the Welcome Evening held at Edinburgh Castle (center). EACPT 2009 President, Professor David Webb and his wife Louise (at right) dressed in Scottish attire for the event.

Because of the success of the meeting, and the interest shown from even those who were unable to attend, we are keen to leave an educational legacy from this meeting. To this end we are currently in the process of making the invited speakers' contributions available on the EACPT2009 website (<http://www.eacpt.org>). It is anticipated these will be accessible to the public within the next few weeks.

A great deal of positive feedback was received after the meeting. This gives us great pride and confidence as we pass the baton over to the organisers of the next EACPT Congress, which will be held in Budapest, Hungary June 26<sup>th</sup> - 29<sup>th</sup>, 2011 (<http://www.eacpt2011.org>). We wish them the best of luck in organizing a very successful and enjoyable meeting. Likewise, we would also like to wish the organisers of WorldPharma2010, Professors Kim Brøsen and Michael Mulvany, all the very best for the IUPHAR Congress in Copenhagen. We look forward to seeing everyone in Denmark in July of next year. ●



Budapest, Hungary will be the location of the 10th Congress of EACPT

Simon Maxwell  
David Webb  
University of Edinburgh



# Meeting Reports

## 36th CONGRESS of the INTERNATIONAL UNION OF PHYSIOLOGICAL SCIENCES

Kyoto, Japan July 27th to August 1st , 2009

### IUPHAR - IUPS JOINT SYMPOSIUM COTRANSMISSION AND PRESYNAPTIC RECEPTORS

It is now a tradition established several years ago, for the Scientific Program Committee of the IUPS Congresses to include in the program a joint symposium covering a scientific topic relevant to both IUPHAR and the International Union of Physiological Sciences (IUPS). The choice of "Cotransmission and Presynaptic Receptors" offered an expanding area in neurobiology, where many years of research and discoveries of physiological relevance are leading to pharmacological applications of therapeutic significance. The symposium was chaired by Salomon Z. Langer (Tel Aviv, Israel) and the cochairperson was Peter Paul Illes (Leipzig, Germany).

The first presentation, by P.P. Illes, entitled "Purinergic cotransmission in the peripheral and central nervous system (CNS)" presented a brief historical background for the now generally accepted concept that many neurons store and release their main transmitter together with a co-transmitter, the most important of which is the purine molecule ATP. Co-released ATP modulates both the postsynaptic effects of noradrenaline (NA) or acetylcholine as well as their exocytotic release via specific presynaptic receptors. NA-ATP cotransmission was originally described in the peripheral sympathetic system and subsequently reported also in neurons of the locus coeruleus. In the CNS, ATP is also co-released from some subpopulations of neurons, together with glutamate, dopamine or serotonin.

The second presentation, by S.Z. Langer, entitled "Presynaptic receptors modulating transmitter release: Therapeutic potential" gave evidence for the existence of receptors in presynaptic nerve terminals, which modulate the release of various neurotransmitters (NT). Autoreceptors are the presynaptic receptors acted upon by the endogenous NT of the neuron. Presynaptic autoreceptors were first discovered for NA, and subsequently for serotonin, dopamine, acetylcholine, GABA, histamine, glutamate and ATP. The term heteroreceptors identifies presynaptic receptors that modulate NT release in response to chemical signals or mediators that are different from the neuron's own NT. Three marketed drugs act at least partly through presynaptic receptors. The antidepressant mirtazapine, an antagonist of central  $\alpha_2$ -adrenoceptors modulates the release of NA and serotonin. Aripiprazole is a presynaptic dopamine partial agonist for the treatment of schizophrenia, which does not increase prolactin levels as side effect. Sumatriptan for the treatment of migraine, is a selective agonist at the presynaptic serotonin 1D heteroreceptors which inhibit the release of substance P and CGRP. Other drugs acting through effects on presynaptic receptors are currently in different stages of preclinical or clinical development.

The third speaker, Lutz Hein (Freiburg, Germany) presented "Auto vs. heteroreceptor functions of  $\alpha_2$ -adrenoceptors" describing results using the dopamine- $\beta$ -hydroxylase (Dbh) promoter to drive expression of  $\alpha_2$ -adrenoceptors

*Continued on page 63...*

# Meeting Reports

## 13TH INTERNATIONAL CONFERENCE ON GASTROINTESTINAL RESEARCH

### Inflammation and Cancer Symposium

The IUPHAR Gastrointestinal Pharmacology Section sponsored a symposium at the 13th International Conference on Gastrointestinal Research (ICGR), held in Split, Croatia, September 10th - 16th, 2009. There were over 250 participants at the meeting representing 19 different European, North American and Asian countries. The symposium, entitled "Inflammation and Cancer", featured four speakers: Dr. A.S. Tarnawski from the USA, Dr. J.K.S. Ko from China, Dr. D. Chen from Norway, and Dr. C.H. Cho from China. The topics focused on the relationship between gastritis and gastric cancer, ulcerative colitis and colon cancer. There was also a description of some new chemical agents for the treatment of inflammation and cancer, and a discussion of a diagnostic endoscopic technique for optical and molecular imaging of inflammatory responses in the colon. •

C.H. Cho  
The Chinese University  
of Hong Kong

From the left, Dr. C.H. Cho, Mrs. Okabe, Mrs.  
Tarnawski, Dr. A.S. Tarnawski and Dr. S. Okabe  
in Split, Croatia, September, 2009.



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## COTRANSMISSION AND PRESYNAPTIC RECEPTORS (continued)

exclusively in NA cells of transgenic mice. Dbh- $\alpha$ -2A transgenic mice were crossed with double knockout mice lacking both  $\alpha$ -2A and  $\alpha$ -2C receptors to generate lines with selective expression of  $\alpha$ -2A autoadrenoceptors in NA cells. Feedback inhibition of NA release and spontaneous locomotor activity were mediated by the  $\alpha$  receptors on NA neurons. Other  $\alpha$ -2 mediated agonist effects like analgesia, hypothermia and sedation were mediated by  $\alpha$ -2 adrenoceptors in non-NA cells. These differences between  $\alpha$ -2 autoreceptors and  $\alpha$ -2 heteroreceptors are of importance in pharmacology and in the strategy of novel drug discovery.

The fourth and last speaker was Gloria Queiroz (Porto, Portugal) who presented "Presynaptic adenosine and P2Y receptors and their role on modulation of neurotransmitter release", which discussed the role of adenine based purines, like adenosine and ATP as modulators of NT release. The adenosine receptor family includes the A1 presynaptic subtype, which is inhibitory on NT release, while the A2A and A2B presynaptic adenosine receptor subtypes facilitate NT release. Concerning the receptors activated by nucleotides, the P2Y receptors are G protein-coupled and linked to presynaptic inhibition of NT release. P2X receptors are ligand-gated ion channel receptors. Adenosine may have a permissive effect on responses to other presynaptic modulators by affecting the rate of desensitization of other presynaptic receptors.

The Symposium was preceded by a short introduction by S.Z. Langer and each presentation was followed by a discussion period. •

Salomon Z. Langer  
Euthymia Ltd., Tel Aviv, Israel



# Meeting Reports

## INTERNATIONAL SYMPOSIUM ON DRUG TRANSPORT AND METABOLISM

Buenos Aires, Argentina

13-14 October 2009



The Drug Metabolism Section (DMS) of IUPHAR sponsored the International Symposium on Drug Transport and Metabolism, organized by the Argentinean Society of Experimental Pharmacology (SAFE). This was the first symposium of its kind in South America supported by the DMS. The symposium was also supported financially by the Argentinean National Agency for Scientific and Technological Promotion (ANPCyT) and co-sponsored by the Argentinean National Academy of Pharmacy and Biochemistry, the Pablo Cassará Foundation and the Universities of Buenos Aires (UBA) and Rosario (UNR). The main goals of the symposium were to cover contemporary topics in the fields of drug transport and metabolism, to bring together scientists, both young and established, from South America and other continents, and to promote interactions and collaborations, in accord with the IUPHAR mission.

The meeting was held in the beautiful Pablo Cassará Foundation building in Buenos Aires. This foundation also kindly provided the coffee breaks. The invited speakers included two members of the DMS, senior scientists from Argentina, USA, Germany, Brazil and Uruguay and, most importantly, eight young Argentine scientists, all of whom delivered excellent short oral presentations. The audience, pictured at right, included about 50 registrants, most of them young scientists and students from Argentinean universities in Buenos Aires, Rosario, Córdoba and Tandil. The organizers provided grants for some of the younger participants, covering their registration fees and inland transportation.



The symposium focused on basic, preclinical and clinical research being conducted on drug transporters and drug metabolizing enzymes. Emphasis was placed on these topics because of their great importance in drug development and therapy (see the program and abstracts on the DMS website, [www.iuphar.org/sections/dmet/sec\\_dmet\\_meetings.html](http://www.iuphar.org/sections/dmet/sec_dmet_meetings.html)). The highly interdisciplinary symposium included presentations from biomedical, pharmaceutical and veterinary scientists. Presentations were made on the importance of transporters in the emerging area of veterinary pharmacology. It was noted that these proteins play a critical role in the breeding of livestock and on the treatment of disease.

Special cash awards and certificates were awarded for the best oral presentations by young invited scientists. The award committee selected two winners for this recognition: Sabrina Copsel from the University of Buenos Aires, and María Laura Ruiz from the National University of Rosario, Argentina.



The symposium was rated a great success by all participants (many of whom are pictured at left). The local arrangements were excellent. All the participants were very impressed with the scientific content and quality of the presentations and the lively discussions in both the lecture room and during the coffee breaks. In private discussions between the DMS

representatives and symposium organizers it was agreed that the continuation of such symposia or workshops is important and necessary for the further development of drug disposition studies in the region and for establishing collaborations, particularly between young scientists in the region and their colleagues in other continents. The continued support and sponsorship of international organizations such as IUPHAR and its Drug Metabolism Section, as well as other stakeholders, is vital for meeting this objective. ●

Jaime Kapitulnik\* and Olavi Pelkonen\*\*

\*The Hebrew University of Jerusalem

\*\* University of Oulu



Aldo Mottino, Jaime Kapitulnik, Modesto Rubio and Carlos Lanusse - the Organizing Committee (from left to right)

# Upcoming Events

## *February*

### **Advances in Pharmacology New Developments in Pain Therapy**

*Swiss Society of Pharmacology and Toxicology* (Bern, Switzerland)

February 4, 2010 <http://pharmacology.unibe.ch/SSPT2010>

### **53rd Annual Meeting**

*Western Pharmacology Society* (San Diego, California, USA)

February 7 - 10, 2010 <http://www.medicine.nevada.edu/wps/annualmeeting.html>

## *March*

### **Workshop on Neuropsychopharmacology for Young Scientists in Europe**

*European College of Neuropsychopharmacology* (Nice, France)

March 4 - 7, 2010 <http://www.ecnp.eu/emc.asp?pageId=1597>

### **83rd Annual Meeting**

*Japanese Pharmacological Society* (Osaka, Japan)

March 16 - 18, 2010 [http://www2.convention.co.jp/83jps/english/english\\_top.html](http://www2.convention.co.jp/83jps/english/english_top.html)

### **2010 Annual Meeting**

*American Society for Clinical Pharmacology and Therapeutics* (Atlanta, Georgia, USA)

March 17 - 20, 2010 <http://www.ascpt.org/annualmeeting2010/index.cfm>

### **P2T Congress 2010**

*French Society of Pharmacology and Therapeutics* (Bordeaux, France)

March 23 - 25, 2010 <http://www.pharmacol-fr.org>

## *April*

### **Experimental Biology '10**

*American Society for Pharmacology & Experimental Therapeutics* (Anaheim, California, USA)

April 24 - 28, 2010 <http://aspet.org/meetings.aspx>

## *June*

### **2010 Annual Meeting**

*Canadian Society of Pharmacology and Therapeutics* (Toronto, Ontario, Canada)

June 2 - 4, 2010 <http://www.pharmacologycanada.org>

### **6th National Conference in Pharmacology**

*Hellenic Society of Pharmacology* (Heraklion, Greece)

June 4 - 6, 2010 <http://gsp.med.auth.gr>

## *July*

### **2010 Annual Meeting**

*Serotonin Club* (Montréal, Québec, Canada)

July 9 - 11, 2010 <http://www.serotoninclub.org>

### **16th World Congress on Basic and Clinical Pharmacology 2010 (WorldPharma2010)**

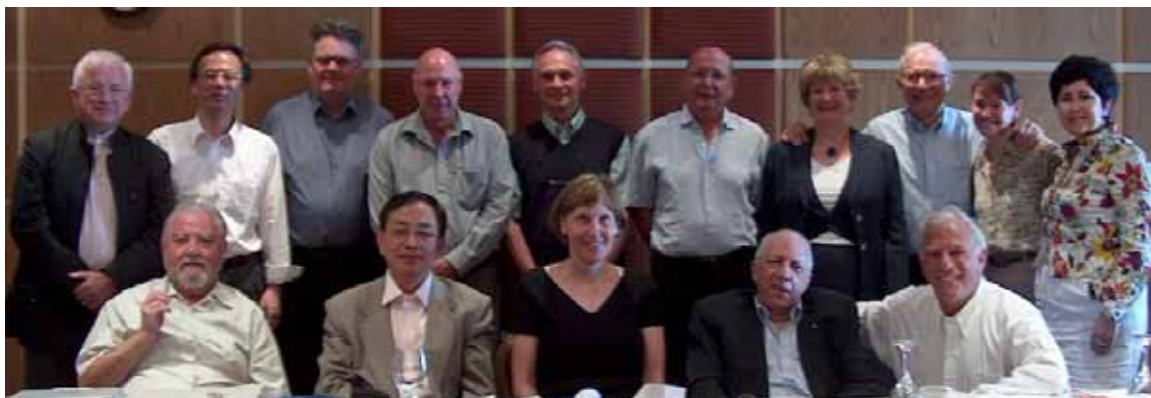
*International Union of Basic and Clinical Pharmacology* (Copenhagen, Denmark)

**July 17 - 23 , 2010** <http://www.WorldPharma2010.org>

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Dr. S.J. Enna, Secretary-General

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*Back row L→R: Drs. Paul Vanhoutte, Masayoshi Mishina, Kim Brøsen, Donald Birkett, Patrick du Souich, Salomon Langer, Gabrielle Hawksworth, Urs Ruegg, Petra Thürmann, and María Isabel Lucena  
Front row L→R: Drs. Sérgio Ferreira, Zhi-Bin Lin, Sue Piper Duckles, Mohamed Khayyal, and S. J. Enna*

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