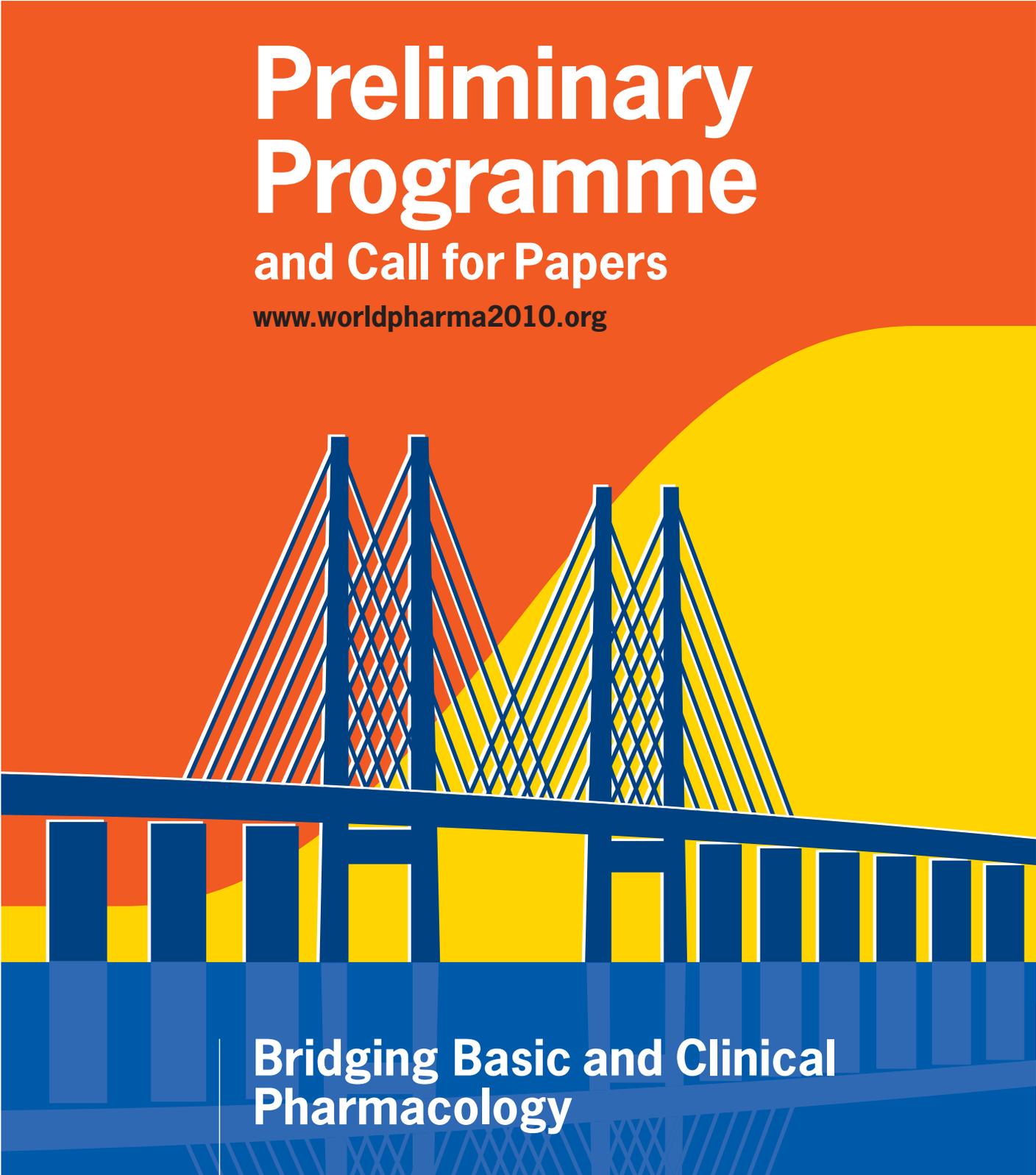


Preliminary Programme

and Call for Papers

www.worldpharma2010.org



**Bridging Basic and Clinical
Pharmacology**

Invitation

Important dates:

Deadline for abstract submission:

15 January 2010

Deadline for the low registration fee:

15 March 2010

Congress dates:

17–23 July 2010

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



WorldPharma2010 combines and integrates basic and clinical pharmacology exactly the way I had hoped
Professor Paul M Vanhoutte (Hong Kong)
Past President of IUPHAR (2002–6)

Organisation

Congress President

Kim Brøsen

Secretary General

Michael J Mulvany

Local Organising Committee

Kim Brøsen (chairman)
Kevin Kearns (for BPS)
Michael J Mulvany (vice-chairman)
Hans Bräuner-Osborne
Ian Ahnfelt-Rønne
Jørgen Matz
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Jon Peters
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Munir Pirmohamed

International Scientific Committee

Sue P Duckles, USA
Patrik du Souich, Canada
Sam Enna, USA
Masa Mishina, Japan
Paul M Vanhoutte, Hong Kong

Host Organisations

Danish Society for 
Pharmacology

Jointly with



Under the auspices of



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

Congress Secretariat



ICS - International Conference Services
P.O. Box 41
Strandvejen 169-171
DK-2900 Hellerup, Copenhagen
Denmark
Tel: +45 7023 7823
Fax: +45 7023 7888
E-mail: WorldPharma2010@ics.dk
Website: www.ics.dk

Venue



Bella Center
Center Boulevard 5
DK-2300 Copenhagen S
Phone +45 3252 8811
bc@bellacenter.dk
www.bellacenter.dk



General Information



Young Investigator Award competition

During the congress, the traditional IUPHAR Young Investigator Award competitions will be held. Further details may be found on the congress website:

www.worldpharma2010.org

Registration

You may register on-line for the congress. Please simply access the congress website at www.worldpharma2010.org and complete the registration following the instruction wizard.

You may also download the registration form at the website www.worldpharma2010.org and send it by post, e-mail or fax as soon as possible in order to benefit from the low registration fee to:



ICS - International Conference Services
P.O. Box 41
Strandvejen 169-171
DK-2900 Hellerup
Denmark
E-mail: reservation@ics.dk
Fax: +45 7023 7888

Kindly note that faxed registration forms should not be mailed as well.



Entitlements (regular and student's fee)

Delegates' registration includes:

- Participation in the scientific programme
- One copy of final programme
- One copy of abstract book
- Refreshment breaks
- Opening reception at the congress venue
- Reception at City Hall – on availability basis

Entitlements accompanying persons

- Opening reception at the congress venue
- Reception at City Hall – on availability basis
- Sightseeing tour of Copenhagen

Payment, registration, cancellation & refund policy

Please consult our website www.worldpharma2010.org for this information.

Bursaries

A number of bursaries are available for young investigators from lesser developed countries. These are supported by an unrestricted grant from AP Møller and Chastine Mc-Kinney Møller's Foundation. For details, please consult our website www.worldpharma2010.org.

Registration fees in Euro:

	By 15 March 2010	From 16 March to 1 June 2010	From 2 June 2010 and on site
Regular fee	€ 600	€ 700	€ 800
Student's fee	€ 300	€ 350	€ 400
Accompanying persons	€ 150	€ 150	€ 150

Hotel accommodation

Hotel rooms in different categories have been reserved for the congress participants. It is anticipated that the hotel situation will be very tight during the congress. It is, therefore, advisable to reserve rooms as early as possible. Rooms will be allocated on a first come first served basis. More information on reservation of hotel accommodation is available at the website www.worldpharma2010.org

Social programme

Sunday 18 July

Opening reception at the congress venue

Attendance is free of charge, but enrolment is required, which you can do when you register.

Monday 19 July

Reception at Copenhagen City Hall

Attendance is free of charge, but enrolment is required, which you can do 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. Please see the website www.worldpharma2010.org for more information.

Commercial exhibition

A commercial exhibition will be an important part of WorldPharma2010. Should you be interested in participating as an exhibitor, please do not hesitate to contact the Congress Secretariat, ICS, for further details. E-mail: exhibition@ics.dk

Information on the internet

About the congress:

www.worldpharma2010.org

What to see and do in Copenhagen:

www.aok.dk

Copenhagen Airport: www.cph.dk

The weather in Denmark: www.dmi.dk

The Metro: www.m.dk

Information about buses, harbour buses and trains:

www.movia.dk, www.dsb.dk/s-tog

To find the easiest way to get around:

www.rejseplanen.dk

WorldPharma2010 provides a very large number of bursaries for young scientists from lesser developed countries

Professor Zhi-Bin Lin (PR China)

President of the 15th World Congress on Pharmacology (Beijing, 2006)



Diamond sponsors:

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The A. P. Møller and Chastine Mc-Kinney Møller Foundation

A. P. Møller og Hustru

Chastine Mc-Kinney Møllers Fond til almene Formaal

AstraZeneca (Italy)

Servier

Danish Cardiovascular Research Academy

**European Association for
Clinical Pharmacology and Therapeutics (EACPT)**

**The Federation of
European Pharmacological Societies (EPHAR)**

**American Society of Pharmacology and
Experimental Therapeutics (ASPET)**

Call for papers

You are kindly invited to submit abstracts describing research work that you wish to present at the congress, either orally or as a poster. Abstracts must be submitted no later than 15 January 2010. Details for the submission of abstracts are available on the conference website www.worldpharma2010.org

Guidelines for submission of abstracts and information to presenters

Please consult our website www.worldpharma2010.org for this information.

Scientific Programme

Preliminary programme at a glance

	Sunday 18 July	Monday 19 July	Tuesday 20 July	Wednesday 21 July	Thursday 22 July	Friday 23 July
08:30		Plenary Lectures 1-3	Plenary Lectures 7-9	Plenary Lectures 10-12	Plenary Lectures 16-18	Plenary Lectures 22-24
09:30	Registration Workshops	Focused Conferences 1-9	Focused Conferences 1-9	Focused Conferences 9-14, 16-17 Young Investigators Competition	Focused Conferences 10-18	Focused Conferences 10-18
12:30		Lunch	Lunch	Lunch	Lunch	Closing Ceremony
13:00		Poster Sessions Workshops Sponsored Symposia	Poster Sessions Workshops Sponsored Symposia	Poster Sessions Workshops Sponsored Symposia	Poster Sessions Workshops Sponsored Symposia	Prize Awards
14:30		Focused Conferences 1-9	Focused Conferences 1-9	Focused Conferences 10-18	Focused Conferences 10-18	
17:30	Official Opening + Opening Lecture	Plenary Lectures 4-6	IUPHAR Lecture	Plenary Lectures 13-15	Plenary Lectures 19-21	
18:30	Welcome Party		IUPHAR General Assembly		EPHAR General Assembly	
19:30		Reception at City Hall		Congress Dinner (Tivoli)		



The WorldPharma2010 scientific programme is the most comprehensive and interdisciplinary in the history of IUPHAR congresses

Professor Sam Enna (USA)

Secretary General of IUPHAR



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AIR NEW ZEALAND 

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Information correct as at 08/2009

Plenary Lectures

Monday 19 July

08:30	PL01	Vascular endothelium: physiology, pharmacology and vascular disease <i>Salvador Moncada (UK)</i>
	PL02	Biologics and good clinical practice in the European Union <i>Klaus Cichutek (Germany)</i>
	PL03	Pharmacological control of central serotonin neurons <i>Trevor Sharp (UK)</i>
17:30	PL04	The challenges of the pharmaceutical industry in the 21st century <i>Emmanuel Canet (France)</i>
	PL05	Cell therapy <i>Stephanie Dimmeler (Germany)</i>
	PL06	The complex effects of 5-hydroxytryptamine in the cardio-vascular system <i>Carlos Villalon (Mexico)</i>

Tuesday 20 July

08:30	PL07	Personalized medicine beyond pharmacogenetics (EACPT Lecture) <i>Matthias Schwab (Germany)</i>
	PL08	The Health Impact Fund <i>Thomas Pogge (USA)</i>
	PL09	Antioxidants & free radicals, good or bad? <i>Barry Halliwell (Singapore)</i>

Wednesday 21 July

08:30	PL10	Structure and function of the GPCR (ASPET Lecture) <i>Brian Kobilka (USA)</i>
	PL11	Calcium and cell functions <i>Masamitsu Iino (Japan)</i>
	PL12	Meeting the challenge of antibiotic resistance <i>Otto Cars (Sweden)</i>

Wednesday 21 July

17:30

PL13

Headache

Jes Olesen (Denmark)

PL14

Toll-like receptor and innate immunity

Shizuo Akira (Japan)

PL15

Estrogen actions in the cardio-vascular system

Sue P Duckles (USA)

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)

9

Plenary lectures

Focused Conferences

FC01	Clinical pharmacology in the emerging countries <i>Leader: Lembit Rägo (Switzerland)</i>							
Session 1	<p>Clinical pharmacology and promotion of rational use of medicines in emerging and developing countries <i>Chair: Suzanne R Hill (Switzerland)</i></p> <table border="0"> <tr> <td data-bbox="437 624 676 801"> <p>Clinical pharmacology in developing countries: overview of current status and future trends <i>Andrew Walubo (South Africa)</i></p> </td> <td data-bbox="711 624 951 770"> <p>Promoting clinical pharmacology in developing countries through education and research training <i>Folke Sjöqvist (Sweden)</i></p> </td> <td data-bbox="986 624 1225 801"> <p>Update of the WHO publication on clinical pharmacology 1970: what we learned from the process and main outcomes <i>Simon RJ Maxwell (UK)</i></p> </td> <td data-bbox="1260 624 1500 801"> <p>Is WHO's Essential Medicines List contributing to the rational use in developing countries? <i>Andrew Lofts Gray (South Africa)</i></p> </td> </tr> </table>				<p>Clinical pharmacology in developing countries: overview of current status and future trends <i>Andrew Walubo (South Africa)</i></p>	<p>Promoting clinical pharmacology in developing countries through education and research training <i>Folke Sjöqvist (Sweden)</i></p>	<p>Update of the WHO publication on clinical pharmacology 1970: what we learned from the process and main outcomes <i>Simon RJ Maxwell (UK)</i></p>	<p>Is WHO's Essential Medicines List contributing to the rational use in developing countries? <i>Andrew Lofts Gray (South Africa)</i></p>
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Session 2	<p>Clinical pharmacology and drug regulation in resource limited settings <i>Chair: Alar Irs (Estonia)</i></p> <table border="0"> <tr> <td data-bbox="437 965 676 1081"> <p>Regulatory clinical pharmacologist – an ambassador of sanity <i>Alar Irs (Estonia)</i></p> </td> <td data-bbox="711 965 951 1081"> <p>Objective drug information versus advertising <i>Krisantha Weerasuriya (Sri Lanka)</i></p> </td> <td data-bbox="986 965 1225 1111"> <p>Drug utilisation monitoring: planning interventions and guiding selection <i>Vera Vlahovic-Palcevski (Croatia)</i></p> </td> <td data-bbox="1260 965 1500 1081"> <p>Advise on drug reimbursement issues: a developing country perspective <i>Victor Zarate (Chile)</i></p> </td> </tr> </table>				<p>Regulatory clinical pharmacologist – an ambassador of sanity <i>Alar Irs (Estonia)</i></p>	<p>Objective drug information versus advertising <i>Krisantha Weerasuriya (Sri Lanka)</i></p>	<p>Drug utilisation monitoring: planning interventions and guiding selection <i>Vera Vlahovic-Palcevski (Croatia)</i></p>	<p>Advise on drug reimbursement issues: a developing country perspective <i>Victor Zarate (Chile)</i></p>
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Session 3	<p>Clinical trials in countries with developing and emerging economies <i>Chair: Lembit Rägo (Switzerland)</i></p> <table border="0"> <tr> <td data-bbox="437 1263 676 1408"> <p>Global drug development in Singapore: regulatory perspective <i>Yang-Tong Foo (Singapore)</i></p> </td> <td data-bbox="711 1263 951 1408"> <p>Ethical issues related to the clinical trials outside ICH regions <i>Juntra Karbwang-Laothavorn (Switzerland)</i></p> </td> <td data-bbox="986 1263 1225 1440"> <p>Clinical trials in resource and infrastructure poor settings: a view point from an investigator in the field <i>Kwablah Awadzi (Ghana) (TBC)</i></p> </td> <td data-bbox="1260 1263 1500 1464"> <p>Clinical trials registries in countries with emerging and developing economies: impact to the clinical research <i>Davina Ghersi (Switzerland)</i></p> </td> </tr> </table>				<p>Global drug development in Singapore: regulatory perspective <i>Yang-Tong Foo (Singapore)</i></p>	<p>Ethical issues related to the clinical trials outside ICH regions <i>Juntra Karbwang-Laothavorn (Switzerland)</i></p>	<p>Clinical trials in resource and infrastructure poor settings: a view point from an investigator in the field <i>Kwablah Awadzi (Ghana) (TBC)</i></p>	<p>Clinical trials registries in countries with emerging and developing economies: impact to the clinical research <i>Davina Ghersi (Switzerland)</i></p>
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FC02

Transmembrane transport: perspectives for disease and drug discovery

Leaders: *Randy Blakeley (USA) & Richard B Kim (Canada)*

Session 1

Molecular structure and pharmacology of membrane transporters

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

Molecular pharmacology of SLC6 neurotransmitter transporters
Ulrik Gether (Denmark)

Mechanisms of sodium-coupled transport
Jonathan A Javitch (USA)

Structure and function of ABC transporters in health and disease
Michael M Gottesman (USA)

Molecular pharmacology and function of the breast cancer resistance protein (ABCG2)
Hendrik van Veen (UK)

Session 2

Membrane transporters and disease

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

ABC transporters in adaptive immunity
Robert Tampe (Germany)

Aquaporines and disease
Søren Nielsen (Denmark)

Multidrug resistance in human epilepsy
Heidrun Potschka (Germany)

Vesicular transporters and CNS disease
Robert H Edwards (USA)

Session 3

Intestinal and hepatic transporters

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

Organic anion transporting polypeptide (OATP) transporters
Richard B Kim (Canada)

Transporter-mediated drug-interactions
Martin F Fromm (Germany)

Peptide transporters
Hannelore Daniel (Germany)

SLC6 amino acid transporters
Stefan Bröer (Australia)

Session 4

Membrane transporters: molecular genetics and pharmacogenetics

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

SLC6 neurotransmitter transporters
Randy Blakely (USA)

Quantitative structure-activity relationship of ABC-transporters
Toshiyuki Sakaeda (Japan) (TBC)

Clinical consequences of transporter variants
Ingolf Cascorbi (Germany)

Regulation of drug transporters
Gerd Kullak-Ublick (Switzerland)



FC03

Ion channels in analgesia and anaesthesia

Organised by BPS

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)

Modulation of TRP channels: impact on pain sensation
Peter McNaughton (UK)

Voltage sensitive sodium channels in chronic pain states
Stephen G Waxman (USA)

Acid sensing ion channels in sensory perception
Eric Lingueglia (France)

TRP proteins on sensory nerves
Ardem Patapoutian (USA)

Session 2

Voltage-operated calcium channels as targets for analgesic action

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

Effects of gabapentinoids on voltage dependent calcium channels
Annette Dolphin (UK)

CaV(2) channels as targets for drug action
Terrance P Snutch (Canada)

Pharmacological regulation of T-type calcium channels in peripheral pain pathways
Slobodan M Todorovic (USA)

Identification of T-type calcium channel blockers
Emmanuel Bourinet (France)

Session 3

Synaptic plasticity in analgesia-related pathways

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

Selectively targeting ion channels for analgesia
Clifford J Woolf (USA)

Cellular neuroadaptations to chronic opioids
MacDonald J Christie (Australia)

NMDA receptors and chronic pain hypersensitivity
Mike Salter (Canada)

Synaptic dis-inhibition in chronic pain states
Hans Ulrich Zeilhofer (Switzerland)

Session 4

Ion channels as molecular targets for general anaesthetics

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

Ion channels as targets for general anaesthetics
Nicholas Franks (UK)

Two pore domain potassium channels as targets for general anaesthetics
Michel Lazdunski (France)

GABAA receptors as targets for general anaesthetics
Neil L Harrison (USA)

HCN channel subunit specific effects of general anaesthetics
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)*

Immortal and immeasurable time in pharmacoepidemiology
Samy Suissa (Canada)

Healthy initiators and sick stoppers
Robert J Glynn (USA)

Natural experiments in pharmacoepidemiology
Olaf H Klungel (The Netherlands)

Treatment decisions and propensity scores
Til Stürmer (USA)

Session 2**Advanced methods for signal generating in claims databases***Chair: Andrew Bate (Sweden)*

Methods for screening longitudinal electronic healthcare records
Andrew Bate (Sweden)

The US based Sentinel Initiative – status, potential and future possibilities
Hugh H Tilson (USA)

The Observational Medical Outcomes Partnership (OMOP) initiative. What it is, its importance and results so far
Paul Stang (USA)

An international perspective on screening for adverse effects of drugs and vaccines – how far can and should active surveillance go?
Stephen JW Evans (UK)

Session 3**Regulatory challenges in managing risk of medicinal products***Chair: Bert Leufkens (The Netherlands)*

What are the issues driving the regulatory agenda on drug safety and risk management?
June M Raine (UK)

Are the available research methods sufficiently valid to address current benefit-risk issues on medicinal products?
Stephen JW Evans (UK)

New approaches to fill the methods gap in pharmacovigilance
Marieke de Bruin (The Netherlands)

Is science enough to enforce appropriate regulatory decision making on drug safety?
DJ Graham (USA)

Session 4**In utero exposure to drugs***Chairs: Lolkje TW de Jong-van den Berg (The Netherlands) & Corinne de Vries (UK)*

Determining drug effects – clinical considerations when establishing birth outcomes
Lolkje TW de Jong-van den Berg (The Netherlands)

The impact of thalidomide and its revival as a vital medicine. Lessons learned from history
Trent D Stephens (USA)

Pharmacological considerations of drug teratogenicity – why animal studies are not sufficient
Per Damkier (Denmark)

Unique methodological features in the pharmacoepidemiology of birth defects
Corinne de Vries (UK)

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)

Adipose tissue, reducing inflammation as a means of targeting the metabolic syndrome
Bjørn Richelsen (Denmark)

The muscle as a target for treatment of the metabolic syndrome
Anna Krook (Sweden)

Sodium glucose co-transporter 2 inhibitors in the treatment of hyperglycaemia
John PH Wilding (UK)

Solute carrier family 30 proteins as targets for beta-cell stimulation
Fabrice Chimienti (France)

Session 2

Pharmaco-therapy in type 2 diabetes mellitus complicated with cardiovascular disease

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

Insulin resistance: marker or mediator of increased cardiovascular risk?
Heinrich Taegtmeyer (USA)

Pathophysiology and treatment of heart failure in patients with type 2 DM
Paolo G Camici (UK)

Antithrombotic treatment in patients with type 2 DM
Steen Dalby Kristensen (Denmark)

Polypharmacy in type 2 DM
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)

The GLP-1 receptor as a target for treatment of diabetes
Lotte Bjerre Knudsen (Denmark)

Incretin mimetics 2010: The safety experience
David M Kendall (USA)

GLP-1 secretion as a prerequisite for the anti-diabetic activity of DPP-4 inhibitors: can it be modified?
Fiona M Gribble (UK)

Incretin-based medication and cardiovascular disease
Baptist Gallwitz (Germany)

Session 4

Normalizing blood glucose in metabolic syndrome II: glitazones and metformin

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

The role of metformin and glitazones in the regulation on hepatic glucose metabolism
Michael Roden (Germany)

Rosiglitazone: lessons from the RECORD study
Philip Home (UK)

Metformin: Lessons from UKPDS
Amanda Adler (UK)

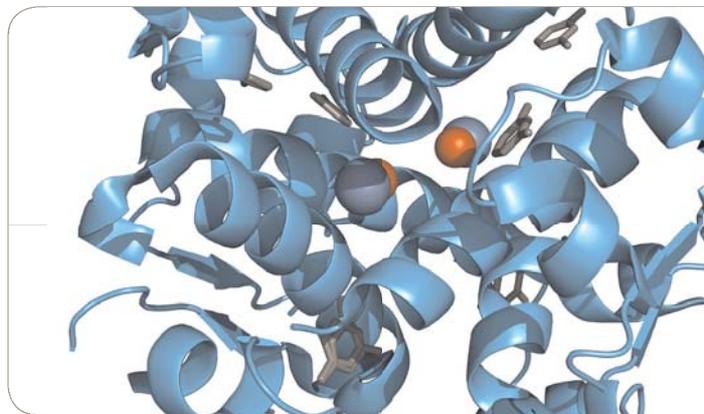
Translational science in metabolic syndrome – future directions
Henning Beck-Nielsen (Denmark)

R&D at a glance

engineering proteins into superior therapies

World-class competence within recombinant protein technology

- Leader within insulin therapies for diabetes
- Discoverer of recombinant human factor VIIa used as haemostatic agent, NovoSeven®
- Creator of the world's first liquid, pre-mixed human growth hormone delivered in a dedicated pen system, Norditropin SimpleXx®



1,003

active patent families

DKK 7

billion is our R&D spend

17%

of revenues are invested in R&D

4,600

4,600 people work with R&D

160,000 L

is the scale up to which we express proteins

Novo Nordisk is a healthcare company and a world leader in diabetes care. In addition, Novo Nordisk has a leading position within areas such as haemostasis management, growth hormone therapy and hormone replacement therapy. Novo Nordisk manufactures and markets pharmaceutical products and services that make a significant difference to patients, the medical profession and society. With headquarters in Denmark, Novo Nordisk employs more than 27,900 employees in 81 countries, and markets its products in 179 countries. Novo Nordisk's B shares are listed on the stock exchanges in Copenhagen and London. Its ADRs are listed on the New York Stock Exchange under the symbol 'NVO'. For more information, visit novonordisk.com.

www.novonordisk.com/rd



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)*

The cardiac hERG channel and arrhythmogenesis

Michael Sanguinetti (USA)

Would modulating intracellular Ca be anti-arrhythmic?

Penelope A Boyden (USA)

Cardiac electrical remodelling in health and disease

David S Rosenbaum (USA)

Pharmacological modulation of cardiac potassium channels

Søren-Peter Olesen (Denmark)

Session 2

Novel anti-arrhythmics

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

Mechanisms of atrial fibrillation

Stanley Nattel (Canada)

Novel principles for pharmacological treatment of atrial fibrillation

Leif Carlsson (Sweden)

Dronedrone for control of ventricular rate during atrial fibrillation: the ERATO study

Jean-Marc Davy (France)

Vernakalant – a therapy for conversion of recent-onset atrial fibrillation

Denis Roy (Canada)

Session 3

Novel treatments for systolic heart failure

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

Metabolic perturbations, modulators and cardiac function

Lionel H Opie (South Africa)

New therapeutic targets in heart failure

Kenneth R Chien (USA) (TBC)

Effects of serotonin in the failing ventricle: potential therapeutic implications

Finn Olav Levy (Norway)

Phosphodiesterases and chronic heart failure

David A Kass (USA)

Session 4

Treatment options for diastolic heart failure

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

MicroRNAs, gene patterns and heart failure

Douglas L Mann (USA)

Diastolic heart failure requires different approaches

Peter P Liu (Canada)

Autophagy and apoptosis in heart failure

Kinya Otsu (Japan)

Rescuing a failing heart

Martin E Anderson (USA)



FC07	Simulation and data modelling in drug development. Better drugs faster? <i>Leader: Hartmut Derendorf (USA)</i>			
Session 1	Modelling and simulation – how and why <i>Chair: Erik Mosekilde (Denmark)</i>			
	Multiscale modelling of living systems: towards drugs and therapy <i>Erik Mosekilde (Denmark)</i>	Hitting robustness <i>Hiroaki Kitano (Japan) (TBC)</i>	Hitting the rythm <i>Albert Goldbeter (Belgium)</i>	Making systems biology drugs work <i>Birgit Schoeberl (USA)</i>
Session 2	Disease models – using virtual organs and patient populations <i>Chairs: Hartmut Derendorf (USA) & Amin Rostami-Hodjegan (UK)</i>			
	Can we predict pharmacokinetics (PK) in disease populations? <i>Amin Rostami-Hodjegan (UK)</i>	Integrated models for the glucose – insulin system <i>Mats O Karlsson (Sweden)</i>	Heart modelling in drug development <i>Blanca Rodriguez (UK)</i>	From circadian control of PK/PD to personalized cancer chemotherapy <i>Francis Lévi (France)</i>
Session 3	Modelling and simulation in clinical drug development <i>Chair: Hans-Günter Schäfer (Germany)</i>			
	Modelling and simulation in clinical drug development at Boehringer <i>Hans-Günter Schäfer (Germany)</i>	Modelling and simulation in clinical drug development at Bristol-Myers <i>Marc Pfister (USA)</i>	Modelling and simulation in clinical drug development at Pfizer <i>Sriram Krishnaswami (USA)</i>	Modelling and simulation in clinical drug development at Novartis <i>Donald Stanski (Switzerland) (TBC)</i>
Session 4	Modelling and simulation – a regulator’s view <i>Chair: Jogarao VS Gobburu (USA)</i>			
	Role of modelling and simulation at the FDA <i>Jogarao VS Gobburu (USA)</i>	Role of modelling and simulation at the EMEA <i>Franz König (UK)</i>	Role of modelling and simulation for drug approval in Asia <i>Yuki Ando (Japan) (TBC)</i>	Disease modelling from a regulatory view (Preliminary title) <i>Siv Jönsson (Sweden)</i>



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)*

Central and peripheral targets for treatment of sexual dysfunction
Petter Hedlund (Sweden) (TBC)

Phosphodiesterase type 5 and inhibitors – an update
Jackie D Corbin (USA)

Non-oral treatments of erectile dysfunction
Jeremy PW Heaton (Canada) (TBC)

Perspectives for the future: treatment of erectile dysfunction including gene therapy and tissue engineering
Tom F Lue (USA) (TBC)

Session 2**Treatment of sexual dysfunction associated with cardiovascular disease***Chairs: Ulf Simonsen (Denmark) & Graham Jackson (UK)*

Animal models for sexual dysfunction and cardiovascular disease
Delphine Behr-Roussel (France)

Rho kinase inhibitors, cardiovascular and sexual function
Kanchan Chitale (USA)

Association of erectile dysfunction and cardiovascular disease
Graham Jackson (UK)

Effects of cardiovascular drugs on sexual function
Javier Angulo (Spain)

Session 3**Pharmacological treatment of lower urinary tract syndrome/benign prostatic hyperplasia***Chairs: Petter Hedlund (Sweden) & Francois Giuliano (France)*

Central and peripheral targets in urinary tract syndrome
Francois Giuliano (France)

Sensory functions as a basis for symptoms and therapy in the overactive bladder
Karl Erik Andersson (USA)

GnRH antagonists – from basic science to the clinic in BPH and overactive bladder
Enrico Colli (Denmark)

BPH – beyond alpha-adrenoceptors and 5 α -reductase
Christian Gratzke (Germany)

Session 4**Pharmacological treatment of bladder dysfunction***Chairs: Karl Erik Andersson (USA) & Mark T Nelson (USA)*

Molecular mechanisms of bladder dysfunction
George J Christ (USA)

Modulation of electro-mechanical coupling in the bladder
Christopher H Fry (UK)

K channel modulation of bladder contractility
Mark T Nelson (USA)

Botulinum toxin treatment for overactive bladder
Marcus John Drake (UK)



<p>FC09</p>	<p>Inflammation and immunopharmacology: new tools for old diseases Local coordinator: Eeva Moilanen (Finland) Leaders: Ian Adcock (UK), Frans Nijkamp (The Netherlands) & Salvador Moncada (UK)</p>								
<p>Session 1</p>	<p>Steroids and beyond: novel treatments for asthma and allergy Chairs: Ian Adcock (UK) & Hiromasa Inoue (Japan)</p> <table border="0" data-bbox="427 667 1469 786"> <tr> <td data-bbox="427 667 671 723">Improving current steroids <i>Ian Adcock (UK)</i></td> <td data-bbox="699 667 943 786">The mast cell as a target for new anti-asthma/allergy drugs <i>Christian Taube (Germany)</i></td> <td data-bbox="970 667 1214 786">Effector and regulatory T cells in asthma <i>Cezmi A Akdis (Switzerland)</i></td> <td data-bbox="1241 667 1469 752">Suppressor of cytokine signaling in asthma <i>Hiromasa Inoue (Japan)</i></td> </tr> </table>				Improving current steroids <i>Ian Adcock (UK)</i>	The mast cell as a target for new anti-asthma/allergy drugs <i>Christian Taube (Germany)</i>	Effector and regulatory T cells in asthma <i>Cezmi A Akdis (Switzerland)</i>	Suppressor of cytokine signaling in asthma <i>Hiromasa Inoue (Japan)</i>	
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<p>Session 2</p>	<p>Biologicals in inflammatory diseases – successes, promises and problems Chairs: Marc Feldmann (UK) & Tom WJ Huizinga (The Netherlands)</p> <table border="0" data-bbox="427 927 1490 1128"> <tr> <td data-bbox="427 927 671 1070">TNF-alpha antagonists – translating molecular insights in autoimmunity into effective therapy <i>Marc Feldmann (UK)</i></td> <td data-bbox="699 927 943 1128">Novel biologicals in the treatment of rheumatoid arthritis – abatacept, rituximab, IL-6 antagonists and beyond <i>Tom WJ Huizinga (The Netherlands)</i></td> <td data-bbox="970 927 1214 1102">Immunomodulatory drugs in multiple sclerosis – from interferon alpha to specific monoclonal antibodies <i>Roland Martin (Germany)</i></td> <td data-bbox="1241 927 1490 1043">Immunogenicity and other problems in the use of biologicals <i>Michael G Tovey (France)</i></td> </tr> </table>				TNF-alpha antagonists – translating molecular insights in autoimmunity into effective therapy <i>Marc Feldmann (UK)</i>	Novel biologicals in the treatment of rheumatoid arthritis – abatacept, rituximab, IL-6 antagonists and beyond <i>Tom WJ Huizinga (The Netherlands)</i>	Immunomodulatory drugs in multiple sclerosis – from interferon alpha to specific monoclonal antibodies <i>Roland Martin (Germany)</i>	Immunogenicity and other problems in the use of biologicals <i>Michael G Tovey (France)</i>	
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<p>Session 3</p>	<p>iNOS – nitric oxide pathway in inflammation and as a target of anti-inflammatory treatment Chairs: Eeva Moilanen (Finland) & Salvador Moncada (UK)</p> <table border="0" data-bbox="427 1301 1481 1503"> <tr> <td data-bbox="427 1301 624 1417">NO as a factor in inflammation <i>Eeva Moilanen (Finland)</i></td> <td data-bbox="651 1301 831 1473">Exhaled NO in the diagnosis and therapy monitoring of inflammatory airway disease <i>Kjell Alving (Sweden)</i></td> <td data-bbox="858 1301 1038 1386">Nitrosative stress in inflammation <i>David A Wink (USA)</i></td> <td data-bbox="1066 1301 1246 1503">iNOS inhibitors in inflammatory diseases: lessons from animal and human studies <i>Richard G Knowles (UK)</i></td> <td data-bbox="1273 1301 1481 1503">NO, mitochondrial function and tissue injury in inflammation and septic shock <i>Salvador Moncada (UK)</i></td> </tr> </table>				NO as a factor in inflammation <i>Eeva Moilanen (Finland)</i>	Exhaled NO in the diagnosis and therapy monitoring of inflammatory airway disease <i>Kjell Alving (Sweden)</i>	Nitrosative stress in inflammation <i>David A Wink (USA)</i>	iNOS inhibitors in inflammatory diseases: lessons from animal and human studies <i>Richard G Knowles (UK)</i>	NO, mitochondrial function and tissue injury in inflammation and septic shock <i>Salvador Moncada (UK)</i>
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<p>Session 4</p>	<p>NSAIDs and COX-2 inhibitors. Current strategies and future directions Chairs: Jane A Mitchell (UK) & Per-Johan Jakobsson (Sweden)</p> <table border="0" data-bbox="427 1637 1449 1809"> <tr> <td data-bbox="427 1637 671 1780">Anti-inflammatory benefits and cardiovascular toxicity of NSAIDs and COX-2 inhibitors <i>Jane A Mitchell (UK)</i></td> <td data-bbox="699 1637 927 1809">Endocannabinoids and beyond. Paracetamol, NSAIDs and novel mechanisms to treat inflammatory pain <i>Peter Zygmunt (Sweden)</i></td> <td data-bbox="970 1637 1166 1693">COX-2 and cancer <i>Ari Ristimäki (Finland)</i></td> <td data-bbox="1193 1637 1449 1749">Inhibitors of PGE synthases <i>Per-Johan Jakobsson (Sweden)</i></td> </tr> </table>				Anti-inflammatory benefits and cardiovascular toxicity of NSAIDs and COX-2 inhibitors <i>Jane A Mitchell (UK)</i>	Endocannabinoids and beyond. Paracetamol, NSAIDs and novel mechanisms to treat inflammatory pain <i>Peter Zygmunt (Sweden)</i>	COX-2 and cancer <i>Ari Ristimäki (Finland)</i>	Inhibitors of PGE synthases <i>Per-Johan Jakobsson (Sweden)</i>	
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<p>Session 5</p>	<p>Novel anti-inflammatory targets and mechanism Chairs: Frans P Nijkamp (The Netherlands) & J Edwin Blalock (USA)</p> <table border="0" data-bbox="427 1951 1485 2092"> <tr> <td data-bbox="427 1951 667 2036">Dendritic cells as target for immunomodulation <i>Guy G Brusselle (Belgium)</i></td> <td data-bbox="699 1951 906 2092">CXC chemokines and antagonists in chronic inflammation <i>Gert Folkerts (The Netherlands)</i></td> <td data-bbox="970 1951 1225 2036">Neuro-immune interactions in health and disease <i>J Edwin Blalock (USA)</i></td> <td data-bbox="1241 1951 1485 2067">Toll-like receptors as new targets for immune disorders <i>Luke AJ O'Neill (Ireland)</i></td> </tr> </table>				Dendritic cells as target for immunomodulation <i>Guy G Brusselle (Belgium)</i>	CXC chemokines and antagonists in chronic inflammation <i>Gert Folkerts (The Netherlands)</i>	Neuro-immune interactions in health and disease <i>J Edwin Blalock (USA)</i>	Toll-like receptors as new targets for immune disorders <i>Luke AJ O'Neill (Ireland)</i>	
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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)*

Place of the innovative methodological approaches in the development of medicinal products in children
Gérard Pons (France)

Increasing role of the observational approaches in the assessment of safety and efficacy of medicinal products in children
Emilio J Sanz (Spain)

Specificities of clinical trials in developing countries: malaria
Karen I Barnes (South Africa)

Specificities of clinical trials in adolescent girls: contraception and abortion
Viveca Odland (Sweden)

Session 2**WHO and medicines in developing countries***Chair: Kalle Hoppu (Finland)*

Introduction & background: why and how was the resolution WHA 60.20 better medicines for children born
Kalle Hoppu (Finland)

Essential medicines list for children and other activities related to paediatric medicines by the WHO
Suzanne R Hill (Switzerland)

Key problems of children's medicines in developing countries – a paediatric clinical pharmacologist view
Shalini Sri Ranganathan (Sri Lanka)

Case: use of old data and modern scientific methods to provide more rational dosing and FDC formulations of TB medicines for children
Gregory L Kearns (USA)

Session 3**Formulation issues***Chairs: Jörg Breitzkreutz (Germany) & Klaus Rose (Switzerland)*

End-user specifications for optimal paediatric formulations
Atieno Ojoo (Denmark)

Novel drug formulations for children
Jörg Breitzkreutz (Germany)

Adapting formulations for children
Anthony J Nunn (UK)

Taste assessment and taste masking
Catherine Tuleu (UK)

Session 4**Pain in children***Chair: Dick Tibboel (The Netherlands)*

Postoperative pain in children; do we really need morphine?
Dick Tibboel (The Netherlands)

Developmental pharmacology of immature organs
John N van den Anker (USA)

Pain in the newborn especially the premature
Karel Allegaert (Belgium)

Pain assessment methods in the newborn
Lena Hellström-Westas (Sweden)

Session 5**Recent advance in paediatric clinical pharmacology***Chair: Shinya Ito (Canada)*

Post-genomics pharmacogenetics in children
Evelyne Jacqz-Aigrain (France)

ADR pharmacogenetics
Bruce Carleton (Canada)

Population PK-guided simulation study in children exposed to drugs in human milk
Shinya Ito (Canada)

Use of biopharmaceuticals in children: efficacy and toxicities of monoclonal antibody for pediatric rheumatic diseases
Shunpei Yokota (Japan)

FC11	G protein-coupled 7TM receptors: from molecular to physiological function <i>Leaders: Brian K Kobilka (USA) & Jean-Philippe Pin (France)</i>							
Session 1	7TM receptor structure <i>Chair: Gebhard FX Schertler (UK)</i> <table border="0" data-bbox="427 629 1495 779"> <tr> <td data-bbox="427 629 676 779"> New G-protein-coupled receptor crystal structures: insights and limitations <i>Gebhard FX Schertler (UK)</i> </td> <td data-bbox="676 629 943 779"> Ligand binding and microswitches in 7TM receptor structures <i>Thue W Schwartz (Denmark)</i> </td> <td data-bbox="943 629 1209 779"> Crystal structure of opsin in its G-protein-interacting conformation <i>Klaus Peter Hofmann (Germany)</i> </td> <td data-bbox="1209 629 1495 779"> Structure of extracellular ligand binding domains in metabotropic glutamate receptors <i>Hisato Jingami (Japan)</i> </td> </tr> </table>				New G-protein-coupled receptor crystal structures: insights and limitations <i>Gebhard FX Schertler (UK)</i>	Ligand binding and microswitches in 7TM receptor structures <i>Thue W Schwartz (Denmark)</i>	Crystal structure of opsin in its G-protein-interacting conformation <i>Klaus Peter Hofmann (Germany)</i>	Structure of extracellular ligand binding domains in metabotropic glutamate receptors <i>Hisato Jingami (Japan)</i>
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Session 2	7TM receptors: activation, inactivation and allosteric modulation <i>Chairs: Jean Philippe R Pin (France) & Thue W Schwartz (Denmark)</i> <table border="0" data-bbox="427 927 1495 1104"> <tr> <td data-bbox="427 927 676 1104"> Metabotropic glutamate and GABA receptors: activation and dimerization <i>Jean Philippe R Pin (France)</i> </td> <td data-bbox="676 927 943 1104"> Allosteric GPCR modulators: taking advantage of permissive receptor pharmacology <i>Arthur Christopoulos (Australia)</i> </td> <td data-bbox="943 927 1209 1104"> Allosteric modulation of adenosine receptors <i>Adriaan P Ijzerman (The Netherlands)</i> </td> <td data-bbox="1209 927 1495 1104"> Activation and inactivation of chemokine 7TM receptors <i>Mette M Rosenkilde (Denmark)</i> </td> </tr> </table>				Metabotropic glutamate and GABA receptors: activation and dimerization <i>Jean Philippe R Pin (France)</i>	Allosteric GPCR modulators: taking advantage of permissive receptor pharmacology <i>Arthur Christopoulos (Australia)</i>	Allosteric modulation of adenosine receptors <i>Adriaan P Ijzerman (The Netherlands)</i>	Activation and inactivation of chemokine 7TM receptors <i>Mette M Rosenkilde (Denmark)</i>
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Session 5	7TM receptors: drug discovery and new physiological functions <i>Chairs: Hans Bräuner-Osborne (Denmark) & P Jeffrey Conn (USA)</i> <table border="0" data-bbox="427 1859 1495 2029"> <tr> <td data-bbox="427 1859 676 2029"> Characterization of GPRC6A – a promiscuous 7TM receptor activated by basic L-amino acids <i>Hans Bräuner-Osborne (Denmark)</i> </td> <td data-bbox="676 1859 943 2029"> Allosteric modulators of GPCRs: a novel approach for the treatment of CNS disorders <i>P Jeffrey Conn (USA)</i> </td> <td data-bbox="943 1859 1209 2029"> GPCRs as metabolite receptors <i>Stephan Offermanns (Germany)</i> </td> <td data-bbox="1209 1859 1495 2029"> A gut feeling for obesity: 7TM sensors on entero-endocrine cells <i>Birgitte Holst (Denmark)</i> </td> </tr> </table>				Characterization of GPRC6A – a promiscuous 7TM receptor activated by basic L-amino acids <i>Hans Bräuner-Osborne (Denmark)</i>	Allosteric modulators of GPCRs: a novel approach for the treatment of CNS disorders <i>P Jeffrey Conn (USA)</i>	GPCRs as metabolite receptors <i>Stephan Offermanns (Germany)</i>	A gut feeling for obesity: 7TM sensors on entero-endocrine cells <i>Birgitte Holst (Denmark)</i>
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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)*Sodium channelopathies and epilepsy
*Ingrid Scheffer (Australia)*Mechanisms of hyper-excitability and co-morbidities in severe myoclonic epilepsy of infancy
*William A Catterall (USA)*Functional effects of sodium channel mutations in inherited epilepsy and migraine
*Massimo Mantegazza (Italy)*Gain-of-function mutations of calcium channels in familial hemiplegic migraine
*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)*Functional effects of sodium channel mutations in inherited chronic pain syndromes
*Stephen G Waxman (USA)*Selective inhibition of sodium channels by gating modifier toxins
*Theodore R Cummins (USA)*Leak-induced pathogenesis and treatment of periodic paralysis
*Karin Jurkat-Rott (Germany)*Gating pore cation currents in hypokalemic and normokalemic periodic paralysis
*Todd Scheuer (USA)***Session 3****Ion channelopathies in the cardiovascular system: inherited arrhythmia and hypertension***Chairs: Michael C Sanguinetti (USA) & Bernard C Rossier (Switzerland)*Molecular mechanisms of potassium channel dysfunction in long- and short-QT syndromes
*Michael C Sanguinetti (USA)*Sodium channelopathies in cardiac arrhythmia
*Alfred L George (USA)*Molecular mechanism of ryanodine receptor dysfunction in cardiac arrhythmia
*Andrew R Marks (USA)*Liddle's disease and salt-dependent hypertension
*Bernard C Rossier (Switzerland)***Session 4****Ion channelopathies in endocrine systems***Chairs: Per-Olof Berggren (Sweden) & Louis J Ptacek (USA)*Calcium channels and insulin release
*Per-Olof Berggren (Sweden)*Channelopathies of ATP-gated potassium channels and insulin release
*Frances Ashcroft (UK)*ATP-gated potassium channels in skeletal and cardiac muscle
*Colin G Nichols (USA)*Potassium channel mutations in Andersen-Tawil syndrome
*Louis J Ptacek (USA)***Session 5****Ion channelopathies in lymphocytes: severe combined immunodeficiency and store-operated calcium channels***Chair: Michael D Cahalan (USA)*Orai and stim in store-operated calcium release
*Michael D Cahalan (USA)*Diverse functions of STIM in store-operated calcium entry
*Richard S Lewis (USA)*Severe combined immunodeficiency syndrome
*Stefan Feske (USA)*Calcium signaling in lymphocytes
Anjana Rao (USA)

FC13**Maximising benefits and minimising harms from drugs****Organised by BPS****Leaders: Munir Pirmohamed (UK) & B Kevin Park (UK)****Session 1****Drug safety: the epidemiology***Chairs: Kees van Grootheest (The Netherlands) & Alasdair Breckenridge (UK)*Adverse drug reactions in hospitals
*Kees van Grootheest (The Netherlands)*An industry perspective of drug safety
*Michael A Ibara (USA)*Drug regulation and drug safety
*Alasdair Breckenridge (UK)*Clinical toxicology perspective of drug safety
*Simon Thomas (UK)***Session 2****Drug metabolism and drug toxicity***Chairs: Frank J Gonzalez (USA) & B Kevin Park (UK)*The use of humanized mice in the study of drug toxicity
*Frank J Gonzalez (USA)*Chemically reactive metabolites: separating fiction from facts
*Kevin Park (UK)*The importance of studying mechanisms of cell death in toxicology
*Sten Orrenius (Sweden)**Pharmacogenetics of drug metabolism – TPMT as a paradigm*
*William E Evans (USA)***Session 3****Pharmacogenomics and adverse drug reactions***Chairs: Steven J Leeder (USA) & Munir Pirmohamed (UK)*The pharmacogenetics of drug hypersensitivity
*Elizabeth J Phillips (Australia)*Genetic predisposition to drug-induced liver toxicity
*Ann K Daly (UK)*Severe adverse drug reactions in children
*Steven J Leeder (USA)*Variability in response to anticoagulants
*Munir Pirmohamed (UK)***Session 4****New technologies – will they help in developing safer drugs***Chairs: David B Goldstein (USA) & Roy Goodacre (UK)*Safety pharmacogenomics
*David B Goldstein (USA)*Metabolomics and its role in predicting ADRs
*Roy Goodacre (UK)*Use of Omics in understanding mechanisms of ADRs
*Richard S Paules (USA)*Systems biology of drug metabolism
*Urich M Zanger (Germany)***Session 5****New insights in the genetics of drug metabolism and action***Chairs: Magnus Ingelman-Sundberg (Sweden) & Richard M Weinshilboum (USA)*Molecular mechanisms of altered drug response
*Magnus Ingelman-Sundberg (Sweden)*Genetic variability of adrenergic receptors
*Ian P Hall (UK)*Genetic variability of pain perception and treatment
*Jörn Lötsch (Germany)*Critical review of genotype-adapted drug therapy
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)*

Efficacy of current pharmacotherapies for opiate dependence: what challenges remain?
Sharon Walsh (USA)

Neurobiological consequences of opioid exposure: Implications for pharmacotherapy development
Yasmin Hurd (USA)

Opioid polymorphisms: What is their role in expression of opioid dependence and response to treatment?
Christopher Evans (USA)

Global impact of opioid pharmacotherapy: beyond heroin dependence
Nicolas C Clark (Switzerland)

Session 2**Pharmacological treatments of alcohol dependence – illusion or opportunity?***Chairs: Rainer Spanagel (Germany) & Barbara J Mason (USA)*

Targeting glutamate receptors – preclinical and clinical studies
Rainer Spanagel (Germany)

Targeting GABA receptors: role of GABAergic drugs
Giovanni Addolorato (Italy)

Targeting nicotinic receptors
Selena E Bartlett (USA)

Gabapentin in alcoholism: from laboratory study to treatment
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)*

The brain circuitry of drug relapse
Peter W Kalivas (USA)

The role of the drug environment in relapse to drug seeking: lessons from rat studies
Yavin Shaham (USA)

Imaging craving in human addicts: does it predict drug relapse?
Rajita Sinha (USA)

Incubation of cocaine craving in rats and humans
Lin Lu (PR China)

Session 4**The role of stress in the addictive process***Chairs: George F Koob (USA) & Markus Heilig (USA)*

The role of stress systems and the amygdale in addictive disorders
George F Koob (USA)

Stress related neuropeptides: candidate treatment targets in alcoholism
Markus Heilig (USA)

Alcohol induced aggression: the role of CRH systems
Klaus A Miczek (USA)

The role of kappa-opioid transmission in dysphoric states related to stress and addiction
Charles Chavkin (USA)

Session 5**Doping – an underestimated problem with many unknowns***Chairs: Harrison G Pope (USA) & Anders Rane (Sweden)*

Societal aspects of doping
Harrison G Pope (USA)

Anabolic steroid abuse: Insights from drug testing results
Gary I Wadler (Canada) (TBC)

Morbidity and mortality in users of anabolic androgenic steroids
Ingmar Thiblin (Sweden)

Anabolic steroid addiction: insights from animals and humans
Ruth I Wood (USA)

FC15

Endothelium in health and disease

Organised by BPS

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

Session 1

Nitric oxide and oxidative stress

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

NOS and vascular disease
Ralph Brandes (Germany)

NOS, cerebral circulation
and vascular disease
Frank M Faraci (USA)

NOS, myocardial micro-
vessels and mitochondria
Thomas H Hintze (USA)

NADPH oxidase and thera-
peutic targeting
Christopher G Sobey
(Australia)

Session 2

Endothelium-dependent hyperpolarization

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

SKCa and IKCa channels
in myoendothelial
signalling
Arthur Weston (UK)

Endothelial microdomains
and integration of arterial
dilatation
Christopher J Garland
(UK)

The calcium-sensing
receptor in blood pressure
modulation
Jacob Tfelt-Hansen
(Denmark)

The function of calcium
pulsars in endothelial cells
Mark T Nelson (USA)

Session 3

Endothelium-mediated control of vascular tone

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

COX-1 products
Michel Félétou
(France)

COX-2 products
Yu Huang
(PR China)

Nucleotides
Joachim Jankowski
(Germany)

Endothelial 15-lipoxy-
genase eicosanoids
William B Campbell
(USA)

Endothelins
David J Webb (UK)

Session 4

Drug development and novel therapeutic targets and approaches

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

Stimulators and activators
of sGC: from bench to
bedside
Johannes-Peter Stasch
(Germany)

Gaseous signalling
molecules: H₂S in the
management of multiple
hypoxic/ischemic condi-
tions
Csaba Szabó (USA)

Therapeutic effects of
enhancing endothelial
nitric-oxide synthase
(eNOS) expression
and preventing eNOS
uncoupling
Ulrich Förstermann
(Germany)

NOX 1, 2, 3 and counting:
targeting oxidative stress
Harald Schmidt (Australia)



Focused Conferences represent a new and important concept.

Professor Sue P Duckles (USA)

President of IUPHAR and president of the 14th World Congress on Pharmacology (San Francisco, 2002)

FC16	Natural products: past and future? Leaders: Ricky Ying-Keung Man (PR China), Tai-Ping Fan (UK) & LIN Zhi-bin (PR China)							
Session 1	Cardioprotection by natural products <i>Chairs: Roberto Soares de Moura (Brazil) & David D Ku (USA)</i> <table border="0" style="width: 100%;"> <tr> <td style="width: 25%;">Red wine polyphenols <i>Valerie Schini-Kerth (France)</i></td> <td style="width: 25%;">Dark chocolate <i>Thomas F Lüscher (Switzerland)</i></td> <td style="width: 25%;">Garlic <i>David D Ku (USA)</i></td> <td style="width: 25%;">Fish oil and ω3-unsaturated fatty acids <i>Hiroaki Shimokawa (Japan)</i></td> </tr> </table>				Red wine polyphenols <i>Valerie Schini-Kerth (France)</i>	Dark chocolate <i>Thomas F Lüscher (Switzerland)</i>	Garlic <i>David D Ku (USA)</i>	Fish oil and ω 3-unsaturated fatty acids <i>Hiroaki Shimokawa (Japan)</i>
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Session 2	Products derived from one single plant with convincing pharmacological data in explaining their mechanism of action <i>Chairs: Yong-Xiang Zhang (PR China) & Rudolf Bauer (Austria)</i> <table border="0" style="width: 100%;"> <tr> <td style="width: 25%;">Pharmacological and clinical research on Lingzhi (Ganoderma) in PR China <i>Zhi-Bin Lin (PR China)</i></td> <td style="width: 25%;">Molecular actions of alkaloids from Echinacea explaining their immunomodulatory activity <i>Rudolf Bauer (Austria)</i></td> <td style="width: 25%;">Memory retrieval improvement by <i>Ptychopetalum olacoides</i>, a traditional Amazonian medicine <i>Elaine Elisabetsky (Brazil)</i></td> <td style="width: 25%;">Pharmacological use of <i>Borago officinalis</i> <i>Anwari Hassul Gilani (Pakistan)</i></td> </tr> </table>				Pharmacological and clinical research on Lingzhi (Ganoderma) in PR China <i>Zhi-Bin Lin (PR China)</i>	Molecular actions of alkaloids from Echinacea explaining their immunomodulatory activity <i>Rudolf Bauer (Austria)</i>	Memory retrieval improvement by <i>Ptychopetalum olacoides</i> , a traditional Amazonian medicine <i>Elaine Elisabetsky (Brazil)</i>	Pharmacological use of <i>Borago officinalis</i> <i>Anwari Hassul Gilani (Pakistan)</i>
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Session 3	Multiple plant products: a matter of synergy <i>Chairs: Zhi-Bin Lin (PR China) & Tai-Ping Fan (UK)</i> <table border="0" style="width: 100%;"> <tr> <td style="width: 25%;">Defining the mechanism of action of Liuwei Dihuang Decoction with metabolomics <i>Yong-Xiang Zhang (PR China)</i></td> <td style="width: 25%;">Danshen diwan <i>Henry Sun (PR China)</i></td> <td style="width: 25%;">Danshen synergy with arsenic <i>Zhu Chen (PR China) (TBC)</i></td> <td style="width: 25%;">Choto-san and recognition behaviour <i>Kinzo Matsumoto (Japan)</i></td> </tr> </table>				Defining the mechanism of action of Liuwei Dihuang Decoction with metabolomics <i>Yong-Xiang Zhang (PR China)</i>	Danshen diwan <i>Henry Sun (PR China)</i>	Danshen synergy with arsenic <i>Zhu Chen (PR China) (TBC)</i>	Choto-san and recognition behaviour <i>Kinzo Matsumoto (Japan)</i>
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Session 4	East meets west: from prevention to therapy <i>Chairs: Paul M Vanhoutte (Hong Kong) & Arnold G Herman (Belgium)</i> <table border="0" style="width: 100%;"> <tr> <td style="width: 25%;">Holistic treatment by traditional Chinese medicine <i>Tai-Ping Fan (UK)</i></td> <td style="width: 25%;">Philosophy of Ayurvedic medicine <i>Arunabha Ray (India)</i></td> <td style="width: 25%;">Contributions of plant-derived products to Western medicine <i>Arnold G Herman (Belgium)</i></td> <td style="width: 25%;">Systems biology and the future of traditional medicine <i>Guoan Luo (PR China)</i></td> </tr> </table>				Holistic treatment by traditional Chinese medicine <i>Tai-Ping Fan (UK)</i>	Philosophy of Ayurvedic medicine <i>Arunabha Ray (India)</i>	Contributions of plant-derived products to Western medicine <i>Arnold G Herman (Belgium)</i>	Systems biology and the future of traditional medicine <i>Guoan Luo (PR China)</i>
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Session 5	Globalization of natural/traditional products <i>Chairs: Ricky Ying-Keung Man (PR China) & Monique Simmonds (UK)</i> <table border="0" style="width: 100%;"> <tr> <td style="width: 25%;">Geographical sustainability of natural products: as modelled by the Araliaceae family <i>Yuri N Zhuravlev (Russian Federation)</i></td> <td style="width: 25%;">Authentication of natural products <i>Monique Simmonds (UK)</i></td> <td style="width: 25%;">Standardization of natural products (chemical and biological fingerprinting) <i>Yung-chi (Tommy) Cheng (USA)</i></td> <td style="width: 25%;">Regulatory affairs <i>Josephine P Briggs (USA)</i></td> </tr> </table>				Geographical sustainability of natural products: as modelled by the Araliaceae family <i>Yuri N Zhuravlev (Russian Federation)</i>	Authentication of natural products <i>Monique Simmonds (UK)</i>	Standardization of natural products (chemical and biological fingerprinting) <i>Yung-chi (Tommy) Cheng (USA)</i>	Regulatory affairs <i>Josephine P Briggs (USA)</i>
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Lundbeck is a specialist in neurology, and our vision is to become one of the world's leading businesses in the development of pharmaceuticals for the treatment of psychiatric and neurological disorders.

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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)*

Hippocampal hyperactivity drives dopamine hyper-responsivity in an animal model of schizophrenia
Anthony A Grace (USA)

Cortical and subcortical dopamine receptor interactions in sensation-seeking
Albert Gjedde (Denmark)

Imaging the dopamine system in schizophrenia: Imbalance between cortical and subcortical dopamine regulation
Anissa Abi-Dargham (USA)

Altered glutamate regulation in schizophrenia
(TBA)

Session 2**Exploring new targets in schizophrenia using translation science***Chairs: P Jeffrey Conn (USA) & Torgny H Svensson (Sweden)*

Mutants in translation: can new models of schizophrenia provide new insight and targets?
John L Waddington (Ireland)

Biomarkers for translational science in schizophrenia
Peter J Uhlhaas (Germany)

Allosteric modulators
P Jeffrey Conn (USA)

What can we learn from the existing drugs with atypical profiles?
Torgny H Svensson (Sweden)

Session 3**Clinical aspects of treatment with antipsychotics***Chairs: Shitij Kapur (UK) & Birte Glenthøj (Denmark)*

Response prediction
Shitij Kapur (UK)

Antipsychotics, dopamine & glutamate
Birte Glenthøj (Denmark)

Personalized procognitive pharmacotherapy in schizophrenia
Andreas Meyer-Lindenberg (Germany)

Cognitive enhancing treatment
(TBA)

Session 4**Exploring new targets in affective disorders using translational science***Chairs: Christopher A Lowry (USA) & David J Nutt (UK)*

Can we target specific neuronal populations to improve the efficacy and safety of antidepressants?
Christopher A Lowry (USA)

In vivo approaches in pre-clinical models
Arne Mørk (Denmark)

Using imaging as a translational tool for studying depression in humans
Catherine J Harmer (UK)

Understanding current antidepressants' action as a way to develop improved therapies
David J Nutt (UK)

Session 5**New pharmacological approaches for treatment of stress induced mood disorders***Chairs: Elisabeth B Binder (Germany) & Rosanio Leopardi (Switzerland)*

Using gene x environment interactions to target personalised treatment in mood disorder
Elisabeth B Binder (Germany)

Mechanism and novel targets for effective treatment of stress disorder
Hans Reul (UK)

Can brain mechanism in PTSD help direct treatment advances?
Eric Vermetten (The Netherlands)

Treatment needs in psychosocial stress, exhaustion and depression
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)

Integration of lipid metabolism, inflammation and immunity by nuclear receptors
Peter Tontonoz (USA)

From metabolism to development via nuclear receptors
Béatrice Desvergne (France)

Nuclear receptor regulation of feeding and fasting
David J Mangelsdorf (USA)

PPARs and metabolic control in adipocytes
Susanne Mandrup (Denmark)

Session 2

Nuclear receptors, vascular function and inflammation

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

Nuclear receptor-dependent repression mechanisms that regulate inflammation
Christopher K Glass (USA)

PPAR α and residual cardiovascular risk
Bart Staels (France)

Mineralocorticoid receptor and vascular function
John Funder (Australia)

PPAR α nuclear receptors and vascular function
Carlie JM DeVries (The Netherlands)

Session 3

Nuclear receptors in the CNS

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

Glucocorticoid action in the brain and stress control during aging
Osborne F Almeida (Germany)

Roles of PPAR γ in stroke
Jaroslawn Aronowski (USA)

PPAR γ modulation in neurodegenerative disease
Michael T Heneka (Germany)

Liver X receptors as therapeutic targets in Alzheimer's Disease
Gary E Landreth (USA)

Session 4

The molecular basis of NR pharmacology

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

Structure of the intact PPAR γ -RXR α nuclear receptor complex on DNA
Fraydoon Rastinejad (USA)

The global organization of nuclear receptor regulatory elements
Gordon Hager (USA)

The role of co-regulators/co-regulator complexes in NR function
Shigeaki Kato (Japan)

Evolution of nuclear receptors and of their ligands
Vincent Laudet (France)



Additional Activities

Sponsored symposium

SS1
Monday 19 July
12:30–14:30

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

Sponsor: AstraZeneca, Italy

*Organizer: Filippo Drago, University of
Catania, Italy, f.drago@unict.it*

Anyone interested in organizing a **workshop**, a **sponsored symposium** or a **satellite meeting** should contact either the President Kim Brøsen, kbrosen@health.sdu.dk or the Secretary General, Michael J Mulvany, mm@farm.au.dk

Congress workshops

CW1
Sunday 18 July

**Challenges in modern gastrointestinal pharmacology:
from functional disorders to neoplastic diseases. IUPHAR GI-section**

*Organizer: Prof. CH Cho, The Chinese University of Hong Kong, Hong Kong,
chcho@cuhk.edu.hk*

CW2
Sunday 18 July

Targeting TRP channels for pain relief (and more)

*Organizer: Arpad Szallasi, Drexel University College of Medicine, Philadelphia, USA,
ASzallasi@SBHCS.com*

CW3
Sunday 18 July

Pharmacology of adrenoceptors: Eighth satellite meeting

Organizer: Mika Scheinin, University of Turku, mika.scheinin@utu.fi

Satellites

Sat1
Odense
24–26 July

12th international symposium on vascular neuroeffector mechanisms

Organizer: Pernille B Lærkegaard Hansen, University of Southern Denmark, Odense, Denmark, plaerkegaard@health.sdu.dk

Sat2
Sweden
24–28 July

**The 18th Annual Symposium of
the International Cannabinoid Research Society**

Organizer: Richard Musty, Burlington, VT, USA, Richard.Musty@uvm.edu

Sat3
Stockholm, Sweden
16–17 July

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

Organizer: Folke Sjöqvist, Karolinska Institute, Sweden, folke.sjoqvist@ki.se

Sat4
Copenhagen
17–18 July

**Empowering effective teaching in pharmacology for a safer tomorrow.
IUPHAR Teaching Section**

Organizer: Joan Lakoski, Pittsburg, USA, Lakoski@hs.pitt.edu

Society workshops

<p>SW01 19 July 12:30–14:30</p>	<p>Clinical trials across Europe and the role of pharmacologists. Turkish Pharmacological Society <i>Organizer: Zafer Güney, Gazi University Medical School, Turkey, zguney@gazi.edu.tr</i></p>
<p>SW02 20 July 12:30–14:30</p>	<p>Novel peripheral mechanisms modulating the cardiovascular system: pathophysiological, pharmacological and therapeutic relevance. Mexican Pharmacological Society <i>Organizer: Carlos M Villalon, Cinvestav-Coapa, Mexico, cvillalon@cinvestav.mx</i></p>
<p>SW03 21 July 12:30–14:30</p>	<p>Pharmacology education for a sustainable future. IUPHAR Teaching Section <i>Organizer: Prof. PK Ragachari, McMaster University, Canada, chari@mcmaster.ca & Prof. Christiaan Brink, North-West University, South Africa, Tiaan, Brink@nwu.ac.za</i></p>
<p>SW04 21 July 12:30–14:30</p>	<p>Inflammation – here, there and everywhere. Finnish Pharmacological Society <i>Organizer: Heikki Vapaatalo, University of Helsinki, heikki.vapaatalo@helsinki.fi</i></p>
<p>SW05 20 July 12:30–14:30</p>	<p>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) <i>Organizer: Anthony P Davenport, University of Cambridge, apd10@medschl.cam.ac.uk</i></p>
<p>SW06 20 July 12:30–14:30</p>	<p>The IUPHAR initiative in integrative and organ systems pharmacology. IUPHAR Integrative and Organ Systems Pharmacology Committee <i>Organizer: David B Bylund, University of Nebraska, dbylund@unmc.edu</i></p>
<p>SW07 19 July 12:30–14:30</p>	<p>Effect of disease on cytochrome P450 and membrane transporters. Canadian Society of Pharmacology and Therapeutics <i>Organizer: Patrick du Souich, University of Montreal, Patrick.du.souich@umontreal.ca</i></p>
<p>SW08 July 20 12:30–14:30</p>	<p>Antioxidants as therapeutic targets. Canadian Society of Pharmacology and Therapeutics <i>Organizers: Issy Laher, University of British Columbia, ilaher@interchange.ubc.ca & Chris Rembold, University of Virginia, CR2G@hscmail.mcc.virginia.edu</i></p>
<p>SW09 21 July 12:30–14:30</p>	<p>The Pfizer Senior Investigator Award in Pharmacology and The CSPT Junior Scientist Award. Canadian Society of Pharmacology and Therapeutics <i>Organizer: Kathryn Gaebel, McMaster University, gaebk@mcmaster.ca</i></p>
<p>SW10 22 July 13:00–14:00</p>	<p>The Boehringer Ingelheim (Canada) Postdoctoral Award in Pharmacology. Canadian Society of Pharmacology and Therapeutics <i>Organizer: Kathryn Gaebel, McMaster University, gaebk@mcmaster.ca</i></p>
<p>SW11 19 July 12:30–14:30</p>	<p>Circadian clocks for drug development and therapeutics. Institut National de la Santé et de la Recherche Médicale (INSERM, France). <i>Organizer: Francis Lévi, INSERM U 776, Villejuif, France, francis.levi@inserm.fr</i></p>

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