10th International Conference and Workshop on BIOLOGICAL BARRIERS

16-21 February 2014

Helmholtz-Institute for Pharmaceutical Research Saarland and Saarland University

Programme Chairs and Organisers:
Prof. Dr. Claus-Michael Lehr, apl. Prof. Dr. Ulrich F. Schäfer,
Prof. Dr. Marc Schneider, Dr. Nicole Daum, Dr. Steffi Hansen,
Dr. Brigitta Loretz, Dr. Maike Windbergs
Sunday Feb 16, 2014

Nanomedicine

• Opening of the Conference by the Programme Chairs and Organisers

• Hot Topics in Nanomedicine
  Patrick Couvreur (University of Paris-Sud, FR)

• Lab-on-a-Chip Approach to Drug Delivery
  Ali Khademhossein (MIT, US)

• Crossing Biological Barriers Promoted by Cyclodextrins
  Gerhard Wenz (Saarland University, DE)

• Microfluidics for Encapsulation and Controlled Release
  David A. Weitz (Harvard University, US)

• Nanomedicines and Penetration of Biological Barriers
  David Grainger (University of Utah, US)

• Porous PLGA Particles
  Steven Schwendemann (University of Michigan, US)

• Bio Meets Nano: The Nanoparticle-Protein Corona
  Roland Stauber (University of Mainz, DE)

• Immunotoxicity of Nanomaterials
  Bengt Fadeel (Karolinska Institute, SE)

• Round Table Discussion

Monday Feb 17, 2014

Bacterial Barriers

• Welcome Address by Dirk Heinz, Scientific Director of Helmholtz Centre for Infection Research (HZI)

• Polymers for Overcoming Bacterial and Eukaryotic Cellular Barriers
  Cameron Alexander (University of Nottingham, UK)
Transport Phenomena at the Bacterial Cell Wall
Mathias Winterhalter (University of Bremen, DE)

Antimicrobial Peptides, Peptidomimetics and Cell-Penetrating Peptides
Henrik Franzyk (University of Copenhagen, DK)

Invasin Modified Drug Carriers
Petra Dersch (HZI, DE)

Bacteria Movement in Biofilms
Romain Briandet (INRA, FR)

Round Table Discussion

Non Cellular Barriers: Mucus and Surfactant

Mucus and Surfactant as Barriers to Pulmonary Drug Delivery
Claus-Michael Lehr (HIPS, DE)

Lung Surfactant
Jesus Perez-Gil (University of Madrid, ES)

Particle Transport Through Mucus
Justin Hanes (Johns Hopkins School of Medicine, US)

Techniques for Analysing Mucus
Kevin Braeckmans (Ghent University, BE)

Mucus in Gastrointestinal Drug Delivery
Catherine Nordgård (University of Trondheim, NO)

Transport Across the Buccal Mucosa
Eva Roblegg (University of Graz, AT)

Contributed Talks and Poster Walk
Tuesday Feb 18, 2014

Overcoming the Skin Barrier

• Welcome Address by Volker Linneweber, President of Saarland University

• Transdermal Vaccination Against HIV by the DermaVir Patch
  Julianna Lisziewicz (Genetic Immunity, US)

• Follicle Targeting
  Steffi Hansen (HIPS, DE)

• Laser Poration for Vaccination
  Richard Weiß (University of Salzburg, AT)

Skin Barrier - New Aspects

• Tight Junctions
  Johanna Brandner (University Hospital Hamburg, DE)

• Skin Defensins
  Jürgen Harder (University of Kiel, DE)

• Extension of the Jmax Concept
  Michael Roberts (University of Queensland, AU)

Skin Barrier - Analytical Techniques

• Correlative Microscopy of the Human Skin Barrier
  Roger Wepf (ETH, CH)

• Computational Modelling of the Skin Barrier
  Dirk Neumann (Scientific Consilience, DE)

• Lateral Diffusion
  Barrie Finnin (Monash University, AU)

• Chemically Selective Visualisation by Confocal Raman Microscopy
  Maike Windbergs (Saarland University, DE)
• Raster Image Correlation Spectroscopy on Liposomes
  Jonathan Brewer (University of Southern Denmark, DK)

• Glycosylation Facilitates Skin Transport of Macromolecules
  Samir Mitragotri (University of California, US)

• Contributed Talks and Poster Walk

Wednesday Feb 19, 2014

In Vitro Models of Biological Barriers

• Welcome Address by Mardas Daneshian, Center for Alternatives to Animal Testing-Europe (CAAT)

• Skin Models
  Joke Bowstra (Leiden University, NL)

• Lung Models in Medicine and Toxicology
  Donna Davies (University of Southampton, UK)

• Lung Models in Drug Delivery
  Nicole Daum (HIPS, DE)

• Dynamic Models of the Gastrointestinal Tract
  Heike Walles (University of Würzburg, DE)

• Human-on-a-Chip
  Uwe Marx (Technical University of Berlin, DE)

• Round Table Discussion
Please select the registration fee of the relevant combination:

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<th>Academia</th>
<th>Industry</th>
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<tr>
<td>Conference Only</td>
<td>€350</td>
<td>€600</td>
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<tr>
<td>Conference &amp; Lab Course</td>
<td>€600</td>
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Early registration fee applies before 15 December 2013.

All fees include a conference dinner, various receptions, basic lunch catering and public transportation within Saarbrücken.

For participants who will submit abstracts, please specify:
- O I would prefer a poster presentation
- O I want my abstract to be considered for an oral presentation

If you wish to participate in lab courses, please indicate your preferences below. Please note: You can participate in 2 out of 3 lab courses.

- **Lab Course 1** Skin drug delivery
  - O First Choice
  - O Second Choice

- **Lab Course 2** Advanced analytical techniques
  - O First Choice
  - O Second Choice

- **Lab Course 3** Nanomedicines
  - O First Choice
  - O Second Choice

Places in lab courses are limited and will be assigned on a first come, first served basis!

Register online: [www.uni-saarland.de/biobarriers2014](http://www.uni-saarland.de/biobarriers2014)
Or send your registration by fax to: +49 – 681 – 302 – 4270
LAB COURSES

The lab courses are designed to provide instruction in advanced analytical techniques and methods relevant to skin research and nanomedicine. The courses offer some theoretical introduction as well as hands-on experience in the lab. Small group sizes (maximum 2x6) allow for intensive training and discussion. The programme is designed primarily to introduce young scientists to standard techniques as well as new equipment, and to provide a comparison of technologies. Last but not least, the setting also provides an excellent opportunity for networking.

• **Lab Course 1  Skin drug delivery**
  Skin preparation and segmentation; permeation and penetration studies; tape stripping; artificial membranes.

• **Lab Course 2  Advanced analytical techniques**
  Visualisation by confocal Raman microscopy, correlative microscopy (SEM-fluorescence overlay); asymmetric flow field flow fractionation (AFFFF), and other quantification and visualisation techniques.

• **Lab Course 3  Nanomedicines**
  Nanoparticle preparation, dynamic light scattering and nanoparticle tracking analysis, particle dissolution testing.

The three lab courses are run in parallel and are each repeated once. It is therefore possible to participate in two out of the three courses. A lab course can only be chosen as a complete unit – individual topics from different courses cannot be selected and combined, for organisational reasons.

Please note that lab courses are finish by lunchtime on Friday February 21, 2014.
ABSTRACTS AND POSTERS

Participants who wish to give a poster or contributed oral presentation must submit a 1 page (A4) abstract. Slots for contributed oral presentations will be assigned at the organisers’ discretion.

Abstracts should be prepared in accordance with the abstract template, found on the homepage.

CONTACT

Contact the KWT conference office for further information, registration and booking:

KWT - Conference Office
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F: +49 - 681 - 302 - 4270
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