

RESEARCHER'S DAY 2021

Phospholipid Research Center Heidelberg
January 18, 2021 – ONLINE MEETING

SCHEDULE (2ND CIRCULAR)

- 8.00 Address of Welcome**
by Alfred Blume (President PRC) and Peter van Hoogevest (Managing Director PRC)
- 8.15 Introduction Phospholipid Research Center**
by Simon Drescher (Deputy Managing Director PRC)
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- 8.30 – 9.40 Morning Session I – Dermal Application of Phospholipids**
Chair: Judith Kuntsche (University of Southern Denmark/Odense)
- 8.30 Lecithin-based nanoemulsions, their effect on human skin cells and their possible potential to serve as wound healing agents**
Claudia Vater, Victoria Klang (University of Vienna/Austria)
Project: Development and analysis of different phospholipid formulations for dermal application and their effect on human dermal cell viability (Supervisor: Claudia Valenta)
- 8.40 Electrospun Bioactive Wound Dressing containing Phospholipid-stabilized Nanodispersions of a Birch Bark Dry Extract**
Rolf Daniels (University Tübingen/Germany)
- 8.50 Characterization of plant-based hydrogenated phospholipid mixtures and interaction with Stratum Corneum model**
Fabio Strati (IADP Halle/Germany)
Project: Characterization of plant based hydrogenated phospholipids for cosmetic and dermal application (Supervision: Reinhart Neubert, Gerald Brezesinski)
- 9.00 Engineering hMSC exosomes with improved anti-inflammatory properties**
Johannes Bader (ETH Zurich/Switzerland)
Project: Research on the drug loading of exosomes (Supervision: Jean-Christophe Leroux)
- 9.10 Development of a phospholipid-based depot technology for sustained drug release**
Paola Luciani (University Bern/Switzerland)
- 9.20 General Discussion on dermal application of phospholipids**
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- 9.40 – 10.00 Coffee Break**
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- 10.00 – 11.20 Morning Session II – Oral Application of Phospholipids**
Chair: Paola Luciani (University Bern/Switzerland)
- 10.00 Design and in vitro release studies of *Azadirachta indica* leaf extract and Artemether/Lumefantrine-containing phospholipid-based tablets**
Chinazom Agbo (University of Nigeria)
Project: Development of phospholipid-based antimalarial tablets of *Azadirachta indica* leaf extract and artemether/lumefantrine for oral delivery (Supervision: Anthony Attama)
- 10.10 Improving Nanoparticulate Carriers for Oral Drug Delivery Using Archaeal Lipids**
Mette Sloth Bohsen (University of Southern Denmark/Odense)
(Supervision: Alexander Treusch)

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- 10.20 **Oral mixed micelle formulations - a promising approach for pediatric drug delivery**
Frank Karkossa (University of Greifswald/Germany)
Project: Oral mixed micelle formulations – a novel phospholipid-based platform for safe and effective pediatric drug delivery (Supervision: Sandra Klein)
- 10.30 **Enabling oral delivery of peptides by designing phospholipid complexes for self-emulsifying drug delivery systems**
Venkatasubramanian Ramakrishnan (University of Copenhagen/Denmark)
(Supervision: Anette Müllertz)
- 10.40 **Comparison of different preparative techniques to prepare co-amorphous drug-lecithin systems**
Keyoomars Khorami (University of Copenhagen/Denmark)
Project: Co-amorphous drug-lecithin systems – bridging the gap between amorphous solid dispersions and lipid-based drug delivery (Supervision: Thomas Rades)
- 10.50 **Phospholipids as excipients in amorphous solid dispersions – an attempt to establish hot-melt-extrusion for oral formulations of poorly soluble drugs**
Mikolaj Czajkowski (Poznan University of Medical Sciences/Poland)
(Supervision: Paulina Skupin-Mrugalska)
- 11.00 **General Discussion on oral application of phospholipids**
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- 11.20 – 12.30 Lunch Break**
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- 12.30 – 13.50 Afternoon Session I – Parenteral Application of Phospholipids**
Chair: Gert Storm (Vice President PRC)
- 12.30 **X-ray-triggered drug release from liposomes: A proof-of-concept study**
Mans Broekgaarden (University Grenoble/La Tronche/France)
Project: Radiation-responsive liposomes for controlled release and tumor permeation of radiotherapy dose enhancers
- 12.40 **Molecular editing of Tumor-associated macrophages using targeted liposomes**
Jai Prakash (University of Twente/The Netherlands)
Project: Modulating Tumor-Associated Macrophages using Cell-specific Targeted Liposomes
- 12.50 **Liposomes and Gender – effects on fertility and the reproductive system**
Avi Schroeder (Israel Institute of Technology/Haifa)
Project: Phospholipids as Metastases-Targeting Molecules Using Barcoding as a New Research Tool in Liposome Discovery
- 13.00 **CD169+ macrophages in lymphoid organs: Border patrol against infections and opportunity for vaccination strategies**
Joke den Haan (University of Amsterdam/The Netherlands)
Project: Virus-like liposomes targeting CD169+ dendritic cells as a novel carrier for cancer immunotherapy (Supervision: Joke den Haan, Yvette van Kooyk)

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- 13.10 **Lipid self-assembling nanoparticles for the delivery of non-coding RNA**
Giuseppe de Rosa (University Federico II of Naples/Italy)
Project: Lipid nanovectors to use non-coding RNA oligonucleotides in glioblastoma in combination with standard therapy
- 13.20 **Lipid-based antifibrotic formulations and their impact on extracellular vesicles**
Cristina Zivko (University Bern/Switzerland)
(Supervision: Paola Luciani/Bern, Gregor Fuhrmann/Helmholtz Institute for Pharmaceutical Research Saarland/Germany)
- 13.30 **General Discussion on triggered and targeted release and exosomes**
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- 13.50 – 14.10 Coffee Break**
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- 14.10 – 15.30 Afternoon Session II – Parenteral Application of Phospholipids**
Chair: Gert Storm (Vice President PRC)
- 14.10 **Bioactive liposomes for the treatment of Non-Alcoholic Steato Hepatitis (NASH)**
Ojha Tarun (University of Twente/The Netherlands)
(Supervision: Ruchi Bansal)
- 14.20 **From algae screening to liposomes enriched in ω 3 fatty acid-containing phosphatidylcholines that possess in vitro anti-leukemic properties**
Finja Witt (University Innsbruck/Austria)
Project: Potential of algal phosphatidylcholines containing ω 3 fatty acids in the supportive therapy of leukemia and lymphoma (Supervision: Andreas Koeberle)
- 14.30 **Immunomodulatory lipobead coating for bone regeneration**
Fatemeh Jahanmard (University of Utrecht/The Netherlands)
Project: Liposome-based coatings for immune stimulation and bone regeneration (Supervision: Enrico Mastrobattista)
- 14.40 **An Engineering Approach: Liposome Production for Pharmaceutical Applications**
Kirsten Ullmann (Karlsruhe Institute of Technology/Germany)
Project: Encapsulation of active pharmaceutical ingredients into liposomes via centrifugation of w/o nano-emulsions (Supervision: Hermann Nirschl)
- 14.50 **PS and PG based anti-inflammatory phospholipid formulations: an update**
Foosie Sahne (Martin Luther University Halle-Wittenberg/Germany)
Project: PS and PG enriched extrudates and nanofibers for local anti-inflammatory therapies (Supervision: Karsten Mäder, Annette Meister)
- 15.00 **Processability of phospholipid powders by twin-screw hot-melt extrusion and evaluation of resulting implants for parenteral delivery**
Marina Kolbina (Freie Universität Berlin/Germany)
Project: Twin-screw extruded phospholipid implants for controlled parenteral delivery (Supervision: Roland Bodmeier)
- 15.10 **General Discussion on parenteral application of phospholipids**

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15.30 – 15.50 Coffee Break

15.50 – 16.50 Evening Session – Parenteral Applications / Basic Research on Phospholipids

Chair: Alfred Blume (President PRC)

15.50 Lipodisks for Dual Delivery of Chemotherapeutic Drugs and Anticancer Peptides

Silva Luis (Uppsala University/Sweden)

(Supervision: Katarina Edwards)

16.00 Lipid phase and ligand distribution affect the acoustic behavior of phospholipid-coated microbubbles

Simone Langeveld (Erasmus MC University/Rotterdam/The Netherlands)

Project: Theranostic phospholipid-coated ultrasound contrast agents: response on demand
(Supervision: Klazina Kooiman)

16.10 Establishing a Fundamental Understanding of the Fate of Mixed Micellar Formulations after Intravenous Administration

Leonie Naßwetter (University Freiburg/Germany)

(Supervision: Heiko Heerklotz)

16.20 Electrostatic Interactions Inside a Lipid Membrane

Sylvio May (North Dakota State University/USA)

Project: Theoretical model to describe formation and stability of liposome-drug complexes

16.30 General Discussion on basic research on phospholipids

16.50 Concluding Remarks

17.00 End of Meeting

- Some information:
- as a presenter you have a maximum of 10 minutes – please stay in time
 - as a presenter: please be online at least 5 minutes before your session starts
 - one “urgent” question could be answered after the talk
 - most questions can be debated during the General Discussion after each session