

CLINAM

European Foundation for Clinical Nanomedicine
Switzerland

14/2023

14th European and Global Summit for Clinical Nanomedicine Summit and Exhibition

Summit with sessions of three other conferences of excellence



Phospholipid Research Center



LIPOSOME RESEARCH DAYS
International meetings on liposomes, lipidic nanoparticles and membrane biophysics



Clinical Nanomedicine 2023: Fulfilling the Global Potential

Crossing the Horizon towards Novel Possibilities, Existing and Evolving Products,
Technologies, Research and Strategies for Global Health

CLINAM SUMMIT - FINAL PROGRAMME

Basel, Switzerland from October 8. - 11. 2023

Venue: Novartis Campus Basel, Switzerland

The Supporters of CLINAM's Goals and Strategy



Overview

SUNDAY		
TIME		
16:00	General Assembly of the International and European Societies for Nanomedicine (Hotel Marriot)	
17:30	Board Meeting of the Journal "Precision Nanomedicine", Official Journal of CLINAM. First IPRP-meetings	
18.30	Break	
19.15	Aperitif and light Dinner for all already arrived Speakers and Chairs at hall Helvetia, Marriott Hotel	
MONDAY		
TIME	Hall 1	
08:30	1. Opening Addresses from CLINAM	
08:45	2. Scientific Introduction of the Summit 2023	
09:15	3. From Origin of Life to Next Generation Therapeutics (Prof. Dr. Ada Yonath, Nobel Laureate)	
10:00	BREAK	
10:30	4. Cancer Nanomedicine	
12:30	LUNCH	
13:30	5. The Overall Progress in the Field of Non-Biological Complex Drugs (NBCDs); Past Successes, Future Opportunities and Remaining Challenges	
15:00	6. Graphene in Nanomedicine	Hall 2
		8.1 CLINAM Posters – Small Speeches (15:00-15:45)
15:45	BREAK	
16:15	7. Novel Nanotherapies in Infection, Inflammation and Chronic Pain	8.2 CLINAM Posters – Small Speeches (16:15-19:00)
	10. Late Breaking Trials and Developments	
17:45	9.1 IPRP (upon Invitation only) 15.00 - 17.00	
19:00	END OF DAY 1	
19:45	Brokerage- and Networking Dinner with Cultural Intermezzos and presentation of the CLINAM Dwarf-award (Ball Hall Mövenpick)	
TUESDAY		
TIME	Hall 1	Hall 2
08:30	11. Polymeric Micelles: Preclinical Progress and Clinical Translation	12. The Surprising Role of Monoacyl Phospholipids (lysolipids)
10:30	BREAK	
11:00	13. Lipid Nanoparticles: Changing the Future of Medicine	14. Nanoparticle Based Formulations against AMR
12:40	LUNCH	
13:40	15. Pharmaceutical Product Design, Development and Manufacturing Insights (APV)	16. Chemistry in or Inspired by Living Systems
15:30	BREAK	
16:00	17. Immune-mediated and Related Disorders: Immunotherapy	18. COVID, mRNA and beyond
		Restaurant
17:20	8.2 CLINAM Posters – Small Speeches (16:00-18:00)	
17:20	19. Advancing the Development of Novel Bioconjugate-based Therapies	
18:20	20. From Supramolecular Chemistry to Related Fields (Prof. Dr. Jean-Marie Lehn, Nobel Laureate)	
19:15	END OF DAY 2	
20:00	Speakers Dinner (Merian Hall)	
WEDNESDAY		
TIME	Hall 1	Hall 2
08:15	21. Nano-capsules and Nanoparticles Modulating the Immune System	22. Biosensors, Diagnostics, Image-guided Nanomedicine
10:15	BREAK	
10:45	23. Nanoscale Approaches to Biology	24. Applied Mechanobiology in Nanomedicine
12:15	LUNCH	
13:15	25. Entrepreneurship in Nanomedicine: Novel Concepts, Drug Development Tools and Therapies	26. Toxicity and Safety in Nanomedicine
14:15	27. Extracellular Vesicles in Nanomedicine - Exosomes	Hall 3
15:00		
15:15	BREAK	
15:45	28. Science and Fake Publications – The Current State of Publications	29. Pharmacokinetics in Nanomedicine and Nanocarriers
17:15	30. The Regulatory Authorities' Voice 2023	
18:45	Closing of the Summit	
19:00	END OF SUMMIT	
20:00	Light Farewell Dinner	
Organization Office European Foundation for Clinical Nanomedicine Dr. med. h.c. Beat Löffler, MA, CEO Joshua Kanters, BSc, Staff member Alemannengasse 12 CH-4058 Basel Switzerland clinam@clinam.org Phone +41 61 695 93 95 Mobile +41 78 654 37 07		Registration Office Viva Management GmbH Abhinay Agarwal Kramgasse 16 CH-3011 Bern Switzerland clinam@vivamanagement.ch Phone +41 31 311 74 34

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Scientific Committee of CLINAM 2023

- **Prof. Dr. med. Patrick Hunziker**, Deputy Head of the Intensive Care Clinic of the University Hospital Basel and CSO of the CLINAM-Foundation, Basel (CH)
- **Prof. Dr. Lajos Balogh**, Editor-in-Chief, Precision Nanomedicine (PRNANO), Andover (USA)
- **Prof. Dr. Yechezkel Barenholz**, Professor Emeritus, Head of Membrane and Liposome Research Lab, Hebrew University Hadassah Medical School, Jerusalem (IL)
- **Prof. Dr. Dr. Twan Lammers**, Institute for Experimental Molecular Imaging, RWTH, Aachen (DE)
- **Prof. Dr. med. Dong Soo Lee**, Chairman, Department of Nuclear Medicine Seoul National University, Seoul (KOR)
- **Dr. med. h.c. Beat Löffler, MA**, CEO, CLINAM-Foundation, Basel (CH)
- **Prof. Dr. Gert Storm**, Institute for Pharmaceutical Sciences, Utrecht University, Utrecht (NL)
- **Prof. Dr. Dr. h.c. Viola Vogel**, Head of the Laboratory of Applied Mechanobiology, Department for Health Sciences and Technology (HEST), ETH, Zürich (CH)
- **PD Dr. Peter van Hoogevest**, Member of the Scientific Advisory Council, Phospholipid Research Center, Heidelberg (DE)
- **Prof. Dr. med. Christoph Alexiou**, University Hospital Erlangen (DE)
- **Prof. Dr. med. Raymond Schiffelers**, Professor of Nanomedicine; Division LAB CDL Research; UMC Utrecht; Chairman of the ETP Nanomedicine Executive Board, Utrecht (NL)
- **PD Dr. habil. Simon Drescher**, Managing Director, Phospholipid Research Center, Heidelberg (DE)
- **Prof. Dr. Theresa Allen**, University of Alberta, University of British Columbia and Organizer of the Lipid Research Days 2022, Vancouver (CAN)
- **Prof. Dr. Pieter Cullis**, Professor of Biochemistry, University of B.C. (UBC) Vancouver, Cofounder of Acuitas Therapeutics, lipid nanoparticle technology, Vancouver (CAN)
- **Dr. Martin Bornhöft**, Head of the International Association for Pharmaceutical Technology (APV), Mainz (DE)

Introduction to the Summit

The nonprofit European Foundation for Clinical Nanomedicine will have after two virtual summits in 2020 & 2022 its 14th summit as a hybrid event with personal attendance and in live stream. CLINAM 14/2023 is the traditional platform with a scientific programme that will elucidate the state of the art of nanomedicine in production, development at the clinic, for prevention, diagnosis and therapy. Since the development of mRNA vaccines based on lipid nanoparticles, nanomedicine has received huge awareness and has matured to a booming field with highest recognition. This is the right moment to review the development of the technology as well as to look at the products and their use in clinical medicine at patient's bed. The achievement of the revolutionary protective wall against COVID-19 by mRNA vaccines predicts a profound acceleration of innovative drug development to the benefit of patients. However, not for all humankind: How can we enable and improve health care in countries where therapy until today is unaffordable or absent? For this, delivery of drugs by different nanoparticles shall be an important issue. All stakeholders in the field, including many high-ranking scientists, this year two Nobel Laureates, and leading managers and regulatory authorities from all continents, exploit the CLINAM-summit since 15 years for new projects and making bonds for cooperation. All speakers contribute to an excellent scientific outlook. For 2023, CLINAM addressed three outstanding organizers of renowned conferences and invited them to participate with a session within the CLINAM Summit. The different skills of the parties will give a unique interdisciplinary perspective on nanomedicine and related fields in Europe and on the international level. The international regulatory authorities shall have their IPRP Meeting during the Summit.

Format of the Meeting

The Summit will take place on the Novartis Campus in Basel, which is since last year open to the public. The summit shall take place in the 2 auditoria, which are located in the impressive building designed by the architect Frank Gehry. The exhibition, poster presentations and lunches will be in the two foyers. The CLINAM Team is grateful for the support that Novartis gives by making the halls available to CLINAM, without influencing in any way the Summit contents itself.

Target Audience

The faculty includes pioneers and opinion leaders in medicine, nanoscience, and targeted medicine, physicians and scientists with a background in pharmacology, biology, physics, chemistry, biophysics, medicine, materials science, and engineering. Industry members find contacts for cooperation, get insight into the novel concepts

and meet keen investigating startups, interested in working together. Developers from the pharmaceutical industry present their recent findings and research. The meeting is a particularly useful source of knowledge for the targeted medicine and delivery community. The conference is also of interest to members of the regulatory authorities as well as policymakers, all experts from industry in the field of life sciences, developers of new tools and materials for nanomedicine, and all those investigating the potential of emerging technologies in the field of healthcare. Experts from venture companies can acquire knowledge on existing and upcoming developments and novel products in the field of nanomedicine and knowledge-based medicine. Government authorities can profit from the international regulator's sessions. CLINAM is a worldwide melting pot for experts and a communication platform where you meet those striving for nanomedical advancement.

Sponsors

Novartis Pharma Ltd., Basel (CH), **Polymun Scientific Immunbiologische Forschung GmbH**, Klosterneuburg (AUT), **Swiss Nanoscience Institute** at the University Basel, Basel (CH), **NanoFCM Co., Ltd**, Nottingham (UK) **Resistell Ltd**, Muttenz (CH), **Lipoid AG**, Steinhausen (CH), **ARDENA**, Oss (NL), **PRECISION NANOSYSTEMS**, Vancouver, BC (CAN), **TECOmedical AG**, Sissach (CH), **National Centre of Competence in Research, Molecular Systems**, Basel (CH), **Helmholtz Institute for Pharmaceutical Research Saarland (HIPS)**, Saarbrücken (DE) **The Canton of Basel-Stadt**, Basel (CH), **The Canton of Basel-Landschaft**, Liestal (CH), **Freiwillige Akademische Gesellschaft (FAG)**, Basel (CH), **Isaac Dreyfus-Bernheim Foundation**, Basel (CH), **European Materials Research Society (EMRS)**, Strasbourg (F), **Phospholipid Research Center**, Heidelberg (DE) **Pfizer Inc.**, Andover, MA (USA), **InnoMedica Holding AG**, Marly (CH), **EMPA Materials & Technology**, St.Gallen (CH), **CordenPharma International**, Basel (CH) **IZON, LTD (EMEA)**, Lyon (FR) , **AstraZeneca**, Cambridge (UK) **L. + Th. La-Roche-Stiftung**, Basel, (CH), **Lonza AG**, Visp (CH), **Swiss National Science Foundation**, Bern (CH), **Marie-Christine Wackernagel**, Basel (CH)

Programme

All events on Sunday are at Hotel Marriott, Messeplatz, Basel
Sunday, October 9, 2023

16.00 **General Assembly of the International and European Societies for Nanomedicine**

17.30 **Board Meeting of the Journal Precision Nanomedicine (PRNANO), Official Journal for Nanomedicine**

19.15 Aperitif and Light Dinner for all arrived Speakers, Chairpersons and invited guests at Hall Helvetia

All events on Monday, Tuesday and Wednesday are at the Novartis Conference Halls
Monday, October 9, 2023

Hall 1

Monday, 08.30 – 08.45

1. Opening

08.30 **Welcome on behalf of the CLINAM-Foundation**

Dr. med. h.c. Beat Löffler, MA, CEO, European Foundation for Clinical Nanomedicine, Basel (CH)

Hall 1

Monday, 08.45 – 09.10

2. Scientific Introduction of the Summit 2023

About **Unresolved Medical Challenges Waiting for Nanomedical Solutions**

08.45 **Nanomedicine: From Science Fiction to an Indispensable Contribution to Medicine**

Prof. Dr. med. Patrick Hunziker, President of the International Society for Nanomedicine; CSO of the CLINAM-Foundation, Deputy Head of the Intensive Care Clinic of the University Hospital Basel , Basel (CH)

09.05 **Questions and Debate**

Hall 1

Monday, 09.15 - 10.00 (keynote lecture)

3. Novel Research and Development for the Future of Life

Chair **Prof. Dr. Scott McNeil**, Head, Nanopharmaceutical and Regulatory Science Group, Department of Pharmaceutical Sciences, University of Basel, Basel (CH)

About **Specific structural features, located mainly on the periphery of ribosomes related to genetic diseases, as well as of antibiotics-resistant pathogens, are being used as locations for targeted next generation therapeutics.**

Nobel Laureate Intervention

09.10 **From Origin of Life to Next Generation Therapeutics**

Prof. Dr. Ada Yonath, Nobel Laureate, Weizmann Institute of Science, Structural Biology Department, Rehovot (IL)

09.45 **Questions and Debate**

10.00 **Break**

Hall 1

Monday, 10.30 - 12.30

4. Cancer Nanomedicine (13' Speech / 2' Questions)

Chair **Prof. Dr. Gert Storm**, Institute for Pharmaceutical Sciences, Utrecht University, Utrecht (NL)

About **Cancer nanomedicine is the best way to overcome the shortcomings of conventional cancer diagnostics and therapies.**

10.30 **The Triple Effect of the Neoadjuvant Immunotherapy Revolution: More Cures, Shorter Treatments, Less Surgery**

Alexander M.M. Eggermont, MD, PhD, Chief Scientific Officer, Board of Directors Professor Clinical & Translational Immunotherapy, UMCU, Utrecht University (NL), Board Comprehensive Cancer Center München (DE)

10.45 **The Role of PET and Radionuclide Therapy in Cancer Immunotherapy**

Prof. Dr. med. Andreas Kjaer, PhD, DMSc, Professor, chief physician, Department of Clinical Physiology, Nuclear Medicine & PET, Rigshospitalet, University of Copenhagen (DK)

11.00 **Combating Cancer with the Immune System**

Prof. Dr. Jérôme Galon, Director of Research at INSERM (French NIH), Head of the Laboratory of Integrative Cancer Immunology, First class Research Director (DR1) at Institut National de la Santé et de la Recherche Médicale (INSERM), Paris (FR)

11.15 **3D-bioprinted Cancer Models for Personalized Therapy of Nanomedicines**

Prof. Dr. Ronit Satchi-Fainaro, Professor of Pharmacology - Tel Aviv University; Head - Cancer Research and Nanomedicine Lab; Director - Cancer Biology Research Center; Director at BoD Teva Pharmaceutical industries; Member at 8400 - The Health Network, Tel Aviv University (IL)

11.30 **Precision Arterial Doxorubicin Drug Delivery and Treating Soft Tissue Tumors: Long-term Follow-up**

Dr. med. Eldad Elnekave, Cofounder and CEO of Listen Therapeutics and Director of Kahn Center for Interventional Oncology SZMC, Jerusalem (IL)

11.45 **Drug Co-encapsulation in Lipid Nanoparticles for a Multimodality Approach to Cancer Therapy**

Prof. Dr. med. Alberto A. Gabizon, Ph.D., Director, Center of Nano-oncology, Shaare Zedek Medical Ctr. Professor of Oncology, Hebrew University-School of Medicine, Jerusalem (IL)

- 12.00 **Establishing a Patient-derived Glioblastoma Organoids Model that Mimics Tumor Heterogeneity in Patients**
Dr. Peter Wick, Head of the Laboratory for Particles-Biology Interactions, Empa, St. Gallen (CH)
- 12.15 **Questions and Debate**
- 12.30 **Lunch**
- Hall 1**
Monday, 13.30 -15.00
- 5. The Overall Progress in the Field of Non-Biological Complex Drugs (NBCDs); Past Successes, Future Opportunities and Remaining Challenges**
- Chair **Dr. Jon de Vlieger**, Coordinator of the Non-Biological Complex Drug Working Group, Strategy Director at Lygature, Utrecht (NL)
- About For almost a decade the NBCDs have been part of the CLINAM discussions. This session now brings together the experience and lessons learned in the past decade, the developments in the field of new drug modalities, and the remaining open challenges to be addressed by the nanomedicine community. Topics will include stability of LNPs, manufacturing and upscaling challenges, discussions on active ingredient vs excipients and development of new modalities. The session aims to end with a lively debate to stimulate further thinking on potential ways to further unlock the nanomedicine potential worldwide.
- 13.30 **Introduction and Overview of 10yrs NBCD Discussions**
Dr. Jon de Vlieger, Coordinator of the Non-Biological Complex Drug Working Group, Strategy Director at Lygature, Utrecht (NL)
- 13.45 **The Storage and In-Use Stability of mRNA Vaccines and Therapeutics: Not A Cold Case**
Prof. Dr. Daan J.A. Crommelin, Professor em. , Department Pharmaceutics, Utrecht Institute for Pharmaceutical Sciences, UIPS , Utrecht (NL)
- 14.00 **Are LNPs Drug Substance or Drug Products? A Recent Review of Regulatory Approvals**
Prof. Dr. Scott McNeil, Professor of Nanopharmaceutical and Regulatory Science, University of Basel (CH)
- 14.15 **Recent Developments at the European Pharmacopeia Related to Complex Drugs, including mRNA LNPs**
Prof. Dr. Gerrit Borchard, Professor in Biopharmaceutics at the University of Geneva, Geneva (CH)
- 14.30 **Design & Development of Drug Dendrimer Conjugate**
Prof. Dr. Marianne Ashford, Senior Principal Scientist, AstraZeneca Advanced Drug Delivery; Pharmaceutical Sciences, R & D, Macclesfield, Cheshire (UK)
- 14.45 **Questions and Debate**
- Hall 1**
Monday, 15.00 - 15.40
- 6. Graphene in Nanomedicine (13' Speech / 2' Questions)**
- Chair **Dr. Peter Wick**, Head of the Laboratory for Particles-Biology Interactions, EMPA, St. Gallen (CH)
- About Carbon nanomaterials offer a rich toolbox of opportunities for translation in various application areas. A perspective of the unique properties and their combination that carbon nanomaterials offer for application in medicine.
- 15.00 **Probing Immunological Interactions of Two-dimensional (2D) Nanomaterials: Graphene and Beyond**
Prof. Dr. med. Bengt Fadeel, Ph.D., A.T.S. Division of Molecular Toxicology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm (SWE)

15.15 **Clinical Translation of Graphene & Lessons Learnt**
Prof. Dr. Kostas Kostarelos, Professor and Chair of Nanomedicine Lab, Faculty of Biology, Medicine & Health, National Graphene Institute, Manchester Cancer Research Institute, University of Manchester, Manchester (UK) and Severo Ochoa Distinguished Professor, Catalan Institute of Nanoscience and Nanotechnology (ICN2), Barcelona (ESP)

15.30 **Questions and Debate**

15.45 **Break**

Hall 1

Monday, 16.15 - 17.45

7. The Use of Novel Nanotherapies in Infection, Inflammation and Chronic Pain (18' Speech / 2' Questions)

Chair **Prof. Dr. med. Patrick Hunziker**, CSO of the CLINAM-Foundation; Deputy Head of the Intensive Care Clinic of the University Hospital Basel and Head of the CLINAM-Lab, Basel (CH)

About The recent pandemic has demonstrated that infectious diseases are still a major threat to human health and society. Apart from viruses, bacterial infection might become even more dangerous because of the increasing problem of antimicrobial resistance. In order to tackle those challenges, not only novel anti-infectives beyond classical antibiotics are needed, but also innovative technologies to deliver those molecules across various biological barriers. Besides the immune system and epithelial tissues, those also include biofilms and the bacterial cell envelope.

16.15 **Nanomedicine for Cancer and Chronic Pain**

Prof. Dr. Nathalie Pinkerton, the Pinkerton Research Group, NYU Tandon School of Engineering, Brooklyn, NY (USA)

16.35 **Inflammation and Pain: Novel Nanotherapies**

Prof. Dr. Patrick Couvreur, University Paris-Saclay, Institut Galien, UFR de Pharmacie, Orsay (FR)

16.55 **Overcoming Biological Barriers in Infectious Diseases**

Prof. Dr. Claus-Michael Lehr, Head of the Helmholtz Institute for Pharmaceutical Research Saarland (HIPS-HZI) and Saarland University, Saarbrücken (DE)

17.15 **Cellular Nanoparticles for Antibacterial Therapy and Vaccination**

Prof. Dr. Liangfang Zhang, Department of Nanoengineering, Director, Chemical Engineering Program, University of California San Diego (USA)

17.35 **Questions and Debate** (10')

Hall 2

Monday and Tuesday

8. CLINAM Posters - Small Speeches

Chair **Dr. Sc. nat. Ruth Schmid**, Former Vice President Marketing, SINTEF Industry, Biotechnology and Nanomedicine, Polymer Particles and Surface Chemistry, Trondheim (NO)

About All poster submitters have in this session the chance to explain their work in 3 minutes.
Session 1: **Monday, 15.00-15.45 Hall 2**; Session 2: **Monday, 16.15-19.00, Hall 2**; Session 3: **Tuesday, 16.00-18.00** (Restaurant)

Hall 3 (Studio)

Monday and Wednesday

9. Closed IPRP - International Pharmaceutical Regulators Programme (Upon invitation only)

Chair **Dr. Wenlei Jiang**, Senior Advisor for Innovation and Strategic Outreach Office of Research and Standards, Office of Generic Drugs CDER/FDA, Silver Spring (USA)

Monday, 17.45-19.00

10. Late Breaking Trials and Developments (12' / 3' Questions)

Chair **Prof. Dr. med. Simo Schwartz Jr. PhD**, Head of Research and Innovation, Clinical Biochemistry Department, Hospital Universitari Vall d'Hebron, Strategy Director of Biobanking and Bioresources, Vall d'Hebron Hospital Barcelona Campus, Barcelona (ESP)

About This session is dedicated to the current trends and challenges in the clinical translation of Nanomedicine as well as the potential pathways for translational development and commercialization. The speakers present late breaking and ongoing trials.

17.45 **Development of Prometil[®], a Lipidic Prodrug of Mitomycin c in Pegylated Liposomes: From Bench to Bedside**

Prof. Dr. Alberto A. Gabizon, Ph.D., Director, Center of Nano-oncology, Shaare Zedek Medical Ctr. Professor of Oncology, Hebrew University-School of Medicine, Jerusalem (IL)

18.00 **Normalization of Tumor Microenvironment by Liposomal Delivery of "Normalizing" Agents to Tumors Improving Dramatically Therapeutic Efficacy of Checkpoint Inhibitors**

Prof. Dr. Yechezkel Barenholz, Professor Emeritus, Head of Membrane and Liposome Research Lab, Hebrew University Hadassah Medical School, Jerusalem (IL)

18.15 **Clinical Nanomedicine Strategies to Develop Tumor Agnostic Therapies in Cancer**

Dr. Neil Desai, Founder, Executive Chairman and former CEO, Aadi Bioscience Inc., Pacific Palisades, CA (USA)

18.30 **Nano Goes ICU: Hepatocellular Targeting of PI3K-Signaling in Sepsis to Restore Liver Function**

Jun-Prof. Dr. Adrian T. Press, Molecular Medicine of Life-Threatening Infections, Jena University Hospital, Department of Anesthesiology and Intensive Care Medicine, Jena (DE)

18.45 **Questions and Debate**

18.55 **End of Day**

19.30 Reserved Tramway for all Guests to the Evening Event at Hotel Mövenpick (Central Station SBB)

20.00 Brokerage- and Network-Dinner at the Ball Hall

20.15 Starter, 21.00 h the Unmatchable Whoop, 21.15 h Dinner, 22.15 Dwarf Awards 2023 22.35 h Dessert

23.00 The Giant Cultural Dessert

23.15 End of Day 1

Tuesday, October 10, 2023 (Parallel Sessions and Plenary Parts in Hall 1)

Hall 1

Tuesday, 8-30 - 10.30

11. Polymeric Micelles: Preclinical Progress and Clinical Translation

Chair **Prof. Dr. Dr. Twan Lammers**, Institute for Experimental Molecular Imaging, RWTH Aachen, Aachen (DE) and **Dr. Cristianne J. F. Rijcken**, PharmD, PhD, Founder and CSO, Cristal Therapeutics, Maastricht (NL)

About Polymeric micelles are extensively explored as carrier materials for delivering drugs to pathological sites. Many different types of polymeric micelles have been designed and evaluated over the years, and about a dozen of them have been evaluated in patients. This session brings together experts in polymeric micelle design, development and clinical translation, and aims to set the stage for discussing future directions and applications of polymeric micelles for targeted drug delivery.

- 08.30 **Polymeric Micelles vs. Polymer Conjugates**
Prof. Dr. María J. Vicent, Head of Polymer Therapeutics Lab. and Coordinator of Advanced Therapies Area at Centro de Investigación Príncipe Felipe, Valencia (ESP)
- 08.50 **All-PHPMA Polymeric Micelles**
Prof. Dr. ir. W.E. (Wim) Hennink, Division of Pharmacology, Utrecht University, Utrecht (NL)
- 09.10 **High-Capacity Polymeric Micelles**
Prof. Dr. Robert Luxenhofer Professor, Department of Chemistry, Helsinki Institute of Sustainability Science (HELSUS), Helsinki (FIN)
- 09.30 **Monitoring Polymeric Micelle Tumor Targeting**
Prof. Dr. Dr. Twan Lammers, Institute for Experimental Molecular Imaging, RWTH Aachen, Aachen (DE)
- 09.50 **Translational Lessons Learnt**
Dr. Cristianne J. F. Rijcken, PharmD, PhD, Founder and CSO, Cristal Therapeutics, Maastricht (NL)
- 10.10 **Questions and Debate**
- 10.30 **Break**

Hall 2

Tuesday, 08.30 - 10.30

12. The Surprising Role of Monoacyl Phospholipids (lysolipids) in Drug Delivery, Medicine, and beyond

A session in Collaboration with the Phospholipid Research Center, Heidelberg (DE)

Chair **PD Dr. habil. Simon Drescher**, Managing Director, Phospholipid Research Center, Heidelberg (DE)

About Phospholipids are already included in numerous approved drug products, but their potential is far from exhausted: Phospholipids are extremely well tolerated, and their capabilities go far beyond those of conventional emulsifiers or solubilizers. The two vaccines against COVID-19 based on lipid nanoparticles (LNPs) are a striking example in this respect. When we talk about phospholipids, or more precisely diacyl phospholipids, we must always expect to find monoacyl phospholipids (MAPCs) as well. MAPCs, also known as lysolipids, differ from diacyl phospholipids in terms of their physicochemical characteristics, physiological role, and application. Therefore, despite having the negative reputation of being lytic to erythrocytes, this subgroup offers many positive properties. The goal of this workshop is to introduce the audience to the characteristics of lysolipids, starting with their physicochemical properties, their role within cancer, their usefulness in stabilizing pharmaceutically used proteins, and ending with their applicability in various drug delivery systems.

- 08.30 **Introduction Phospholipid Research Center**
PD Dr. habil. Simon Drescher, Managing Director, Phospholipid Research Center, Heidelberg (DE)
- 08.35 **Phospholipids as Nanomaterials**
PD Dr. Peter van Hoogevest, CEO PHARMANOVATION and Member of the Scientific Advisory Council of the Phospholipid Research Center, Heidelberg (DE)
- 08.40 **The Lysolipids Paradox**
Prof. Dr. Heiko Heerklotz, BIOS and Institute of Pharmaceutical Sciences, University of Freiburg i. Br. (DE)
- 09.00 **Stabilization of Lyso-phosphatidylcholine-levels in Patients with Cancer**
Prof. Dr. Ulrich Massing, Professor of Pharmaceutical Sciences, University of Freiburg i. Br. (DE)

- 09.20 **Lyso-phosphatidylcholine for the Stabilization of Pharmaceutical Proteins against Adsorption and Aggregation**
Prof. Dr. Wolfgang Frieß, Chair of Pharmaceutical Technology and Biopharmaceutics, Ludwig-Maximilians-University, München (DE)
- 09.40 **Elucidating the Use of Lyso-phospholipids in Oral Self-nanoemulsifying Drug Delivery Systems**
Prof. Dr. Anette Müllertz, Professor, Department of Pharmacy, Faculty of Health and Medical Sciences, Technical University Copenhagen (DNK)
- 10.00 **Lecithin and Monoacyl Lecithin as Interacting Excipients in Oral bio-enabling Formulations of Poorly Water-soluble Drugs**
Prof. Dr. Martin Kuentz, University of Applied Sciences and Arts Northwestern Switzerland, Muttenz (CH)
- 10.20 **Last Questions and Debate**
- 10.30 **Break**
- Hall 1**
Tuesday, 11.00 - 12.40
- 13. Lipid Nanoparticles: Changing the Future of Medicine**
A Session in collaboration with the Lipid Research Days, Vancouver, Canada
- Chair **Prof. Dr. Theresa Allen**, University of Alberta, and University of British Columbia and Organizer of the Lipid Research Days 2022, Vancouver (CAN)
- About **Recent advances in nucleic acid and drug delivery technologies are catalyzing rapid changes in the biotechnology and pharmaceutical industries on a global scale, enabling personalized medicines, new treatments for rare and undefeated disease and the promise of less expensive treatments for diseases in under-developed countries. This session brings together international experts whose work has been seminal to the development and clinical approval of novel nanomedicines to discuss some ways that nanomedicine will contribute to the changing future of medicine.**
- 11.00 **Rational Design of Lipid Nanoparticles for in Vivo Delivery of mRNA**
Prof. Dr. Pieter Cullis, Professor of Biochemistry, University of B.C. (UBC) Vancouver, Cofounder of Acuitas Therapeutics, lipid nanoparticle technology, Vancouver (CAN)
- 11.15 **The quest for next generation lipid nanoparticles for cell-specific delivery of mRNA**
Prof. Dr. Gaurav Sahay, Associate Professor in the Department of Pharmaceutical Sciences, College of Pharmacy at Oregon State University, Corvallis, OR (USA)
- 11.30 **Lipid Nanoparticles Enable Next Generation mRNA-based Medicine**
Dr. Ying K. Tam, M.Sc., Ph.D., Chief Scientific Officer of Acuitas Therapeutics, Vancouver (CAN)
- 11.45 **Development of Selective Organ Targeting (SORT) Lipid Nanoparticles (LNPs) for the Correction of Disease Causing Mutations**
Prof. Dr. Daniel J. Siegwart, Professor, W. Ray Wallace Distinguished Chair in Molecular Oncology Research, Department of Biomedical Engineering, University of Texas Southwestern Medical Center, Dallas (USA)
- 12.00 **Advancing Lipid Nanoparticles for Safe and Efficient Nucleic acid Delivery to Extrahepatic Tissues**
Dr. Dominik Witzigmann, Chief Executive Officer and Co-founder NanoVation Therapeutics, Vancouver, BC (CAN)
- 12.15 **What can be learned from Blank Lipid Nanoparticles: A Closer Look**
Dr. Ramin Darvari, PhD, MS, Associate Research Fellow, Pfizer Inc. Andover, MA (USA)

12.30 **Questions and Debate**

12.40 **Lunch**

Hall 2

Tuesday, 11.00 -12.40

14. Nanoparticle Based Formulations against AMR (12' speech / 3' questions)

Chair **Prof. Dr. Yechezkel Barenholz**, Head of Membrane and Liposome Research Lab, Hebrew University, Hadassah Medical School, Jerusalem (IL)

About Microbial resistance kills people and impedes control of infectious diseases, damages trade and economies. Has nanomedicine got in store novel approaches for a new type of drugs for the treatment of infections caused by resistant bacteria? And are there, besides this, other pathways to go against AMR?

11.00 **Anatomical and Cellular Barriers for Targeting Pathogens in Rodent and Human Tissues**

Prof. Dr. Dirk Bumann, Center for Molecular Life Sciences, Biozentrum, University of Basel (CH)

11.15 **Antimicrobial Resistance Research and Development Funding across the Entire Value Chain**

Dr. Ralf Sudbrak, Senior Scientific Programme Officer Global AMR R&D Hub, Berlin (DE)

11.30 **Bacterial Nanomotions Combined with Supervised Machine Learning, Accurately Classify Antibiotic Susceptibility**

Dr. Alexander Sturm, CSO, Resistell AG, Muttenz (CH)

11.45 **Novel Nanodrugs Overcoming AMR**

Prof. Dr. Yechezkel Barenholz, Hebrew University, Hadassah Medical School, Jerusalem (IL)

12.00 **Is there a Valid Business Model in AMR in Today's Market Environment?**

Dr. Marc Gitzinger, Founder, Board Member & CEO, BioVersys, Basel (CH)

12.15 **Inorganic Antimicrobials - Nanozymes Combat Bacteria Hiding within Macrophages**

Prof. Dr. Inge Herrmann, Department of Mechanical and Processing Engineering, Nanoparticle Systems Engineering Lab, ETH Zurich, Zurich (CH)

12.30 **Questions and Debate**

12.40 **Lunch**

Hall 1

Tuesday, 13.40 - 15.30

15. Pharmaceutical Product Design, Development and Manufacturing Insights (APV)

A Session in Collaboration with the International Association for Pharmaceutical Technology (APV), Mainz (DE)

Chair **Dr. Bernd Riebesehl**, Executive Director TPPM, Project Head TRD & PHAD Innovation Committee Novartis Leading Scientist, Novartis Campus, Basel (CH)

About We are witnessing now more diverse therapeutic modalities enriching the pharmaceutical product landscape diagnosing or treating unmet medical needs. This session shall feature insights into nanomedicine product design as it addresses unmet drug delivery and patient needs. Also insights into process design and insights for GMP manufacturing will inspire peers.

- 13.40 **LNP-production for mRNA-vaccines, Therapeutics and for Gene-editing – Proof of Concept for a Versatile Process**
Dr. Andreas Wagner, PPA, Head Liposome Technology, Polymun Scientific Immunbiologische Forschung GmbH, Klosterneuburg (AUT)
- 13.55 **“Tail-flipping” Liposomes to Reprogram the Tumor Microenvironment: Design to Preclinical Analysis**
Prof. Dr. Jai Prakash Chair of Engineered Therapeutics, Department of Advanced Organ Bioengineering and Therapeutics, University of Twente, Enschede (NL)
- 14.10 **Harnessing the Power of Radioactive Isotopes to Treat Patients**
Dr. Lorenza Fugazza, Head TRD Radio Ligando Therapy, Novartis, Basel (CH)
- 14.25 **Challenges in Oral Nanoformulation Prediction by Physiologically based Biopharmaceutics Modelling (PBBM)**
Dr. Martin Hingle, Early Phase Product Development, Technical Research and Development, Novartis Pharma AG, Basel (CH)
- 14.40 **Poloxamers – Individual, Versatile & Safe**
Dr. Meike Maria Roskamp, Development Pharma Solutions, BASF SE, Ludwigshafen (DE)
- 14.55 **Development of Effective and Safe RNA-LNP Medicines for the Clinic**
Dr. Lloyd Jeffs, Sr. Director of BioPharma Services, Precision NanoSystems, Vancouver (CAN)

15.10 **Questions and Debate**

15.30 **Break**

Hall 2

Tuesday, 13.40 - 15.30

16. Chemistry in or Inspired by Living Systems: From Novel Chemical Tools to Improved Nanomedicine

A Session in Collaboration with the German Research Foundation (DFG) established "Collaborative Research Center on Nanodimensional Polymer Therapeutics for Tumor Therapy" organized by the CRC/SFB, Johannes Gutenberg University, Mainz (DE)

- Chair **Prof. Dr. Matthias Barz**, Professor for Bio-pharmacy, Leiden Academic Center for Drug Research (LACDR), Leiden University, (NL) and **Prof. Dr. Lutz Nuhn**, Chair of Macromolecular Chemistry, Institute of Functional Materials and Biofabrication, Fac. of Chemistry and Pharmacy, Julius-Maximilians University Würzburg, Würzburg (DE)
- About **The control of chemical reactivity, self-assembly and response mechanisms in small or macromolecules plays an important role in life, but is also entering the spotlight for establishing the next generation nanoparticle-based therapies. In this session, we aim to present some of the latest developments in the areas of biorthogonal chemistry and life-like Nanosystems in nanomedicine.**

- 13.40 **Next-Level Chemical Tools for Bioorthogonal Click-to-Release**
Prof. Dr. Hannes Mikula, Professor of Chemical Biology, Institute of Applied Synthetic Chemistry, TU Vienna, Vienna (AT)
- 13.55 **In Vivo Click Chemistry as Novel Tool in Immunology**
Sander van Kasteren, Professor of Molecular Immunology, Leiden University (NL)
- 14.10 **Nanomaterials Communicating with Cells**
Prof. Dr. Tanja Weil, Scientific Member and Director at the Max Planck Institute for Polymer Research, Ulm (DE)
- 14.25 **Synthetic Biomolecular Condensates**
Prof. Dr. Lu Su, Assistant Professor Science, Leiden Academic Centre for Drug Research LACDR/Drug Delivery Technology, Leiden (NL)

- 14.40 **Synthetic Transcription Factors**
Prof. Dr. Sebastian Pomplun, Assistant Professor - Drug Discovery Leiden University and Max-Planck Institute for Psychiatry, The Hague (NL)
- 14.55 **Chemical Evolution of Amphiphilic Xenopeptides for Cas9 Ribonucleoprotein Delivery**
Prof. Dr. Ulrich Lächelt, Assistant Professor for Preclinical Medicines Development, Group Leader Intracellular Drug Delivery, Department of Pharmaceutical Sciences, University of Vienna (AT)
- 15.10 **Questions and Debate**
- 15.30 **Break**

Hall 1

Tuesday, 16.00 - 17.10

17. Immune-mediated and Related Disorders: Rare and Neglected Diseases, Immunotherapy, Novel Immune Technologies (9'Speech / 1' First Questions)

Chair **Dr. Marina A. Dobrovolskaia Ph.D., MBA, PMP**, Director of Operations Head of Immunology Section, Nanotechnology Characterization Laboratory, Frederick (USA)

About Alterations in the structure and function of the immune system are needed for the host's adaptation to changing environment and response to pathogens but may also lead to diseases affecting both the immune and other systems in the body. This session will discuss cutting-edge research pertaining to undesirable immune activation (e.g., hypersensitivity reactions and CARPA in response LNP-mRNA vaccines), desirable immunomodulation (e.g., nanoparticle-mediated change in the tumor microenvironment for therapeutic purposes), and increasingly complex landscape of methodologies for assessing nanoparticles interactions with the immune system. It will also discuss the role of nanomedicines in the therapy of rare and neglected diseases.

- 16.00 **Assessing Nanoparticles Immunotoxicity in the 21st Century: Cells, Animals and beyond**
Dr. Marina A. Dobrovolskaia Ph.D., MBA, PMP, Director of Operations Head of Immunology Section, Nanotechnology Characterization Laboratory, Frederick (USA)
- 16.10 **NC6300 Nanomedicine Modulates the Tumor Microenvironment and Improves the Efficacy of Immunotherapy**
Dr. Fotios Mpekris, Physics/Mechanical Engineering Post-Doctoral Fellow and Lecturer, Cancer Biophysics Laboratory, University of Cyprus (CYP)
- 16.20 **The Nanostructure and Anaphylactic Reactogenicity of the Covid-19 mRNA-LNP Vaccine, Comirnaty: New findings and concepts**
Prof. Dr. med. Janos Szebeni, PhD, Semmelweis University, Dept. of Translation Medicine, Nanomedicine Section, Budapest (HUN)
- 16.30 **The Worldwide Impact of Nanomedicines for Rare and Neglected Diseases**
Prof. Dr. med. Anthony A. Attama, Drug Delivery and Nanomedicines Research Laboratory, Department of Pharmaceutics, Faculty of Pharmaceutical Sciences, University of Nigeria, Nsukka, Institute for Drug-Herbal Medicine-Excipient Research and Development, University of Nigeria, Nsukka (NGA)
- 16.40 **The Nanoprimer: a Significant Opportunity to Boost the Efficacy of Cancer Vaccines**
Dr. Julie Devallière, Biology Team Leader, Curadigm SAS, Paris (F)
- 16.50 **Questions and Debate**
- 17.10 **Short break to get together in Hall 1 for 2 Plenary Sessions**

Hall 2

Tuesday, 16.00 - 17.10

18. COVID, mRNA and Beyond

Chair **Dr. Heinrich Haas**, Department of Biopharmaceutics and Pharmaceutical Technology
Johannes Gutenberg-Universität Mainz, Mainz (DE)

About With the successful application of messenger RNA-based vaccines against Covid-19, the terms 'LNPs' and 'mRNA' have entered common language use, not only in a wider scientific community, but also in public. This great breakthrough boosted as well development of mRNA nanomedicines for application in other therapeutic or preventive settings. Here, further to existing LNPs, tailored nanoparticles and improved control strategies may be required. In this session, mRNA nanomedicine technologies for applications to combat Covid-19 and beyond will be discussed

15.50 Engineering of Improved RNA Nanoparticle Systems by Controlled Self-Assembly

Dr. Heinrich Haas, Department of Biopharmaceutics and Pharmaceutical Technology
Johannes Gutenberg-Universität Mainz, Mainz (DE)

16.00 BNT211: A Phase 1 Trial Evaluating Safety and Efficacy of CLDN6 CAR-T Cells and CARvac-mediated in vivo Expansion in Patients with CLDN6-positive Advanced Solid Tumors

Dr. Dr. Benjamin Rengstl, Director Clinical Development & Immunoreceptor Therapy BioNTech SE, BioNTech Cell & Gene Therapies, Mainz (DE)

16.10 Nanotechnologies for COVID and Beyond

Professor Dr. Moein Moghimi, Professor of Pharmaceutics and Nanomedicine, School of Pharmacy, and Translational and Clinical Research Institute, Newcastle University, Newcastle upon Tyne (UK); Adjoint Professor, Skaggs School of Pharmacy and Pharmaceutical Sciences, and Colorado Center for Nanomedicine and Nanosafety, University of Colorado Anschutz Medical Campus, CO (USA)

16.20 Characterization of Quality Attributes of Nanovaccines for COVID-19

Dr. Luigi Calzolari, Project Leader –Unit F2 Technologies for Health, European Commission Directorate General Joint Research Centre Directorate F – Health and Food, Ispra, VA (ITA)

16.30 In Use Stability of COVID-19 Vaccines

Prof. Dr. Daan J.A. Crommelin, Professor em. of the Department Pharmaceutics, Utrecht Institute for Pharmaceutical Sciences, UIPS, Utrecht (NL)

16.40 Interactions of Corona Proteins with Cell Receptors and Nanoparticle Uptake Mechanisms for Targeting

Prof. Dr. Anna Salvati, Department of Nanomedicine & Drug Targeting, Groningen Research Institute of Pharmacy (GRIP), University of Groningen, Groningen (NL)

16.50 Questions and Debate

17.10 Short break to get together in Hall 1 for 2 Plenary Sessions

Hall 1

Tuesday 17.20 - 18.10

19. Advancing the Development of Novel Bioconjugate-based Therapies: Translating Wishes Into Daily Practices

Chair **Dr. Cristianne J. F. Rijcken, PharmD, PhD**, Founder and CSO, Cristal Therapeutics, Maastricht (NL)

About Metal-free click chemistry has emerged as a powerful tool in the bioconjugation field, offering a versatile and efficient approach to the synthesis of bioconjugates without the use of potentially toxic metal catalysts. The field of bioconjugation involves the covalent attachment of two or more molecules to create a new functional entity, and is essential for many applications in areas such as drug development and diagnostics. One of the most widely used metal-free click reactions is the strain-

promoted azide-alkyne cycloaddition (SPAAC), which involves the reaction between an azide and an alkyne functional group in the presence of a catalyst, such as a cyclooctyne or a bicyclononyne. SPAAC has been used to create a wide range of bioconjugates, including fluorescent probes, bioactive molecules, and antibody drug conjugates. SPAAC has several advantages over traditional metal-catalyzed click reactions, such as high selectivity, good biocompatibility, and low toxicity. Another metal-free click reaction is the tetrazine-alkene cycloaddition, which enables the selective conjugation of tetrazine-modified molecules to alkenes. This reaction has been used to create bioconjugates for imaging and drug delivery applications, and has the advantage of super-fast reaction kinetics and high biocompatibility, hence even allowing in-vivo click. In this session, the increased applicability of metal-free click chemistry in the bioconjugation field will be addressed for the various product areas, their beneficial features as well as anticipated future developments.

17.20 **CliCr® - An Innovative Class of Metal Free Click Reagents to Enable a Broad Diversity of Bioconjugations**
Dr. Cristianne J. F. Rijcken, PharmD, PhD, Founder and CSO, Cristal Therapeutics, Maastricht (NL)

17.30 **Linkerology® - Preparing Cargos for Conjugation - A Survey from Cell-free Production of Biomolecules to Plasma Treatment of PTFE Surfaces**
Dr. Thomas Bruckdorfer, CSO & VP Business Development, Iris Biotech GmbH, Marktredwitz, (DE)

17.40 **Accelerating Bioconjugates Development: A Holistic Approach for Technology Selection and Manufacturing Integration**
Dr. Nina Hentzen, Senior Scientist, Early Development Bioconjugates, Lonza AG, Visp (CH)

17.50 **Questions and Debate**

18.10 **Short Break**

Hall 1

Tuesday 18.20 - 19.15

Keynote lecture

20. From Supramolecular Chemistry to Related Fields

Chair **Prof. Dan Peer**, Vice President for Research and Development, Tel Aviv University, Director, Laboratory of Precision NanoMedicine, Managing Director, SPARK Tel Aviv, Center for Translational Medicine, Tel Aviv University, Tel-Aviv (IL)

About Constitutional Dynamic Chemistry (CDC) operates on dynamic constitutional diversity and performs component *selection* to achieve adaptation, in response to either internal or external factors, thus opening towards an Adaptive Chemistry. Bioorganic, biomaterial and bio(nano)-chemical aspects will be presented.

Nobel Laureate Intervention

From Supramolecular towards Adaptive (Nano)-Chemistry - Bioorganic and Biomedical Aspects

18.20 **Prof. Dr. Jean-Marie Lehn**, Nobel Laureate, ISIS - Université de Strasbourg, Strasbourg (FR)

19.00 **Questions and Debate**

19.15 **End of Day 2 (Tramway and Taxis)**

20.00 **Speakers Apéritif at Merian Spitz**

20.20 **Speakers Dinner at Merian Hall**

Wednesday, October 11, 2023 (Parallel Sessions and Plenary Parts in Hall 1)

Hall 1

Wednesday, 08.15 - 10.15

21. Nanocapsules and Nanoparticles Modulating the Immune System: Immunization for Tumors and Dampening Autoimmunity and Allergy

A Session in Collaboration with the German Research Foundation (DFG) established "Collaborative Research Center on Nanodimensional Polymer Therapeutics for Tumor Therapy" organized by the CRC/SFB, Johannes Gutenberg University, Mainz (DE)

Chair **Prof. Dr. med. Volker Mailänder**, Center for Translational Nanomedicine, University Medicine of the Johannes Gutenberg University Mainz (DE) and **Prof. Dr. med. Stephan Grabbe**, Director of the Department of Dermatology, Medical Center and Polyclinic, Speaker of the Research Center for Immunotherapy, Mainz (DE)

About Nanotechnology has evolved from liposomes to lipid nanoparticles to an even wider variety of carrier systems. With the success of immunizations against viruses like SARS-CoV2 it became clear that nanocapsules and nanoparticles are ideal delivery systems for influencing the immune system and delivering immunologically active agents in a hitherto unprecedented way. Beyond developing vaccines for viruses, we will focus in this session on the harder-to-achieve goal of cancer immune treatment by nanocarriers as well as suppressing unwanted immune reactions like in autoimmune diseases or allergies.

08.15 **Targeting Nanocarriers in Vivo and Maximizing Tumor Therapy Effects with Antigen/Adjuvant Combinations in Protein Nanocapsules**

Dr. rer. nat. Michael Fichter, Department of Dermatology, University Medical Center of the Johannes Gutenberg-University Mainz (DE); Max Planck Institute for Polymer Research, Mainz (DE)

08.30 **Cancer Immunotherapy gone Viral: Plant Viruses against Cancer**

Prof. Dr. Nicole F. Steinmetz, Department of NanoEngineering, Vice Chair for Research and Faculty Affairs, Director, Center for Nano-ImmunoEngineering, (Founding Director) Co-Director, Center for Engineering in Cancer, Institute for Engineering (IEM) UC San Diego (USA)

08.45 **Employing mRNA against Cancer**

Dr. Mustafa Diken, University Medical Center Mainz, TRON and BioNTec, Mainz (DE)

09.00 **Ionizable Lipid Nanoparticles in Action & beyond Delivery**

Prof. Dr. Khuloud T. Al-Jamal FRSC, FRPharmS, FHEA, Head of Medicines Development, Institute of Pharmaceutical Science, King's College London (UK)

09.15 **Lyotropic Nonlamellar Liquid Crystalline Nanoparticles for Immunomodulation**

Professor Dr. Moein Moghimi, Professor of Pharmaceutics and Nanomedicine, School of Pharmacy, and Translational and Clinical Research Institute, Newcastle University, Newcastle upon Tyne (UK) and Adjoint Professor, Skaggs School of Pharmacy and Pharmaceutical Sciences, and Colorado Center for Nanomedicine and Nanosafety, University of Colorado Anschutz Medical Campus, CO (USA)

09.30 **Combination of Tumor Thermal Ablation, Cytokines and Lipidic Adjuvant Provide a Distal Immune Response**

Dr. Nathalie Mignet, UTCBS Lab leader, Université Paris Cité, CNRS UMR8258, INSERM U1267, Paris (FR)

09.45 **rPEGs - non-immunogenic, Universal PEG Alternatives Obtained by Isomerizing the PEG Structure**

Prof. Dr. Holger Frey, Department of Chemistry, Johannes Gutenberg University, Mainz (DE)

10.00 **Questions and Debate**

10.15 **Break**

Hall 2

Wednesday, 08.15 - 10.15

22. Biosensors, Diagnostics, Imaging-guided Nanomedicine and Targeted Drug Delivery (12' Speech / 3' Q.)

- Chair **Prof. Dr. med. Christoph Alexiou**, Department of Otorhinolaryngology, Head and Neck Surgery, Head Section of Experimental Oncology and Nanomedicine (SEON), Else Kröner-Fresenius-Foundation Professorship, University Hospital Erlangen (DE)
- About Improved diagnostics, imaging and targeted drug delivery are important core elements of nanomedicine with the aim of providing patients with fast and individual care. In this session different aspects of diagnosis, imaging and targeted therapy will be elucidated
- 08.15 **Intrathecal exosomes Brain Imaging for CSF-lymphatic Efflux and Neuroimmune Interface**
Prof. Dr. med. Dong Soo Lee, PhD, Seoul National University & Medical Science and Engineering, POSTECH Seoul/Pohang (KOR)
- 08.30 **Design of Transcytotic Cancer Nanocarrier: An Alternative Approach to Reach Solid Tumor beyond the Classic EPR Effect**
Prof. Dr. Huan Meng, PhD Professor, National Center for Nanoscience and Technology (NCNST) Beijing, (CN)
- 08.45 **New potential of SPIONs for Diagnostic Purposes**
Prof. Dr. med. Christoph Alexiou, Department of Otorhinolaryngology, Head and Neck Surgery, Head Section of Experimental Oncology and Nanomedicine (SEON), Else Kröner-Fresenius-Foundation Professorship, University Hospital Erlangen (DE)
- 09.00 **Hierarchically Organized Delivery Systems for Brain Diseases**
Prof. Dr. Paolo Decuzzi, Senior Researcher and Professor, Director, Laboratory of Nanotechnology for Precision Medicine, Italian Institute of Technology, Genova (IT)
- 09.15 **Generating Artificial Targets to Deliver Therapies Specifically to the Brain**
Dr. Daniel Gonzalez Carter, 'La Caixa' Junior Leader Research Fellow Molecular Bionics Laboratory Institute for Bioengineering of Catalonia (IBEC) Barcelona (SP)
- 09.30 **Intravenous Administration of Liposomal DHA Halts Atherosclerosis Progression and Enhances Plaque Stability**
Prof. Dr. Gert Storm, Institute for Pharmaceutical Sciences, Utrecht University, Utrecht (NL)
- 09.45 **Questions and Debate**
- 10.15 **Break**

Hall 1

Wednesday, 10.45 - 12.15

23. Nanoscale Approaches to Biology

- Chair **Prof. Dr. Bert Müller**, Director Biomaterials Science Center, Thomas Straumann-Chair for Materials Science in Medicine, University of Basel, Department of Biomedical Engineering, Allschwil (CH)
- About Synthetic biology is the engineering and redesign of biological systems. Still today there is limited understanding of the huge potential that synthetic biology offers in nanomedicine.
- 10.45 **Biomedical Applications of Synthetic Biology**
Prof. Dr. Lior Nissim, Assistant Professor, Head of the Biomedical Synthetic Biology Group, Hadassah Medical School, The Hebrew University of Jerusalem (IL)

- 11.00 **Bernoulli Principle: Forces Acting on Lipid Bilayers in the Cardiovascular System**
Prof. Dr. Bert Müller, Director Biomaterials Science Center, Thomas Straumann-Chair for Materials Science in Medicine, University of Basel, Department of Biomedical Engineering, Allschwil (CH)
- 11.15 **Developing an Effective mRNA-LNP Vaccine against a Highly Lethal Bacterium**
Prof. Dan Peer, Vice President for Research and Development, Tel Aviv University, Director, Laboratory of Precision NanoMedicine, Managing Director, SPARK Tel Aviv, Center for Translational Medicine, Tel Aviv University, Tel-Aviv (IL)
- 11.30 **Nanomedicine Hitchhiking with Immune Cells**
Dr. Alexandros Marios Sofias, Principal Investigator, head of the Immune Cell Targeting and Imaging Research Group, Institute for Experimental Molecular Imaging (ExMI), RWTH Aachen University Hospital, Aachen (DE)
- 11.45 **Modular and Adaptive Self-assembling Dendrimers for Nanomedicine**
Prof. Dr. Ling Peng, CNRS Research Director, Equipe Labellisée Ligue Contre le Cancer Centre Interdisciplinaire de Nanoscience de Marseille, Aix-Marseille University, CNRS, UMR 7325 CINaM Marseille (FR)
- 11.55 **Questions and Debate**
- 12.15 **Lunch**
- Hall 2**
Wednesday, 10.45 - 12.15
24. Applied Mechanobiology in Nanomedicine
- Chair **Prof. Dr. h.c. Viola Vogel**, Head of the Laboratory of Applied Mechanobiology, Department for Health Sciences and Technology (HEST), ETH, Zürich (CH)
- About **Mechanobiology is a rapidly evolving field revealing that cells not only respond to biochemical factors in their microenvironment, but also to a wide range of physical factors. While much has been learned at the molecular and cellular level on how cells sense and transduce mechanical stimuli, the next challenge is how to best translate this knowledge into the clinic.**
- 10.45 **Mechanobiology of Extracellular Matrix: Why it Matters**
Prof. Dr. h.c. Viola Vogel, Head of the Laboratory of Applied Mechanobiology, Department for Health Sciences and Technology (HEST), ETH, Zürich (CH)
- 11.00 **Mechano-Genomics in Health & Disease**
Prof. Dr. G.V. (Shiva) Shivashankar, Full Professor of Mechano-Genomics at the Department of Health Science and Technology, ETH Zurich and the Paul Scherrer Institute, Villigen (CH)
11. 15 **Microtissue Approach to Unravel Mechanobiology and ECM-Cell Dynamics Driving Tissue Growth: Paving the Path for Future Nanomedicine Integration**
Dr. med. vet., Dr. sc. ETH Mario C. Benn, Group Leader, Department of Health Sciences and Technology, Institute of Translational Medicine Laboratory of Applied Mechanobiology, ETH Zurich. Zürich (CH)
- 11.30 **Microbubbles for Mechanical Modulation of Biological Barriers upon Combination with Ultrasound.**
Dr. Roger Molto Pallares, Junior Group Leader, Universitätsklinik RWTH Aachen, Aachen (DE)
- 11.45 **Questions and Debate**
- 12.15 **Lunch**

Hall 1

Wednesday, 13-15 - 15.15

(12 'speech / 3' Questions)

25. Entrepreneurship in Nanomedicine: Novel Concepts, Tools, Drug Developments and Therapies

Chair **Dr. Neil Desai, PhD**, Founder, Executive Chairman and former CEO, Aadi Bioscience Inc., Pacific Palisades, CA (USA)

About Academic nanomedicine scientists often develop highly innovative medicines, sometimes with little regard for translatability. At the same time, academic tech transfer is not properly aligned with the investor and biotech world. To ensure real-life benefits for future patients, new initiatives must be geared at implementing forward-thinking tools aimed at bridging the academia-investor-biotech gap.

13.15 **Treating Disease by Focusing on Innate Immunity**

Prof. Dr. Willem Mulder, Radboud University Medical Center & Eindhoven University of Technology (NL)

13.30 **New Strategies for in vivo Evaluation of Gene Delivery Technologies**

Prof. Dr. Jörg Huwyler, Professor of Pharmaceutical Technology, University of Basel, Basel (CH)

13.45 **Breaking Barriers with Nanomedicines: Phase 2a Applications in Oncology and Neurology from a Science-Entrepreneur Perspective**

Dr. Stefan Halbherr, CSO, Research and Development, InnoMedica Holding AG, Bern (CH)

14.00 **Challenges in Clinical Development of Nanomedicines**

Dr. Bastiaan Buddingh, Business Development Manager Nanomedicines / Senior Scientist, ARDNA BV, Oss (NL)

14.15 **The NanoAnalyzer: Combining Flow Cytometry & Particle Analysis to Speed up Nanomedicine development**

Dr. Rob Tempest, Scientific Applications Manager, NanoFCM Co., Ltd., Nottingham (UK)

14.30 **LNP Formulation Screening, a CDMO Perspective**

Umberto Romeo, Head of R&D, CordenPharma SpA, Caponago (IT)

14.45 **Peptide-based Nucleic Acid Nanomedicines for Gene Modulation in Cancer**

Dr. Gilles Divita PhD, Aadigen LLC and Divincell SAS, Nîmes (FR)

15.00 **Granagard: A nano-formulation of Pomegranate seed oil; A Smart Food Supplement for the Prevention of Neurodegenerative Diseases**

Prof. Dr. Ruth Gabizon, CEO and Founder, Granalix Biotechnologies, Jerusalem (IL)

15.05 **Last Questions and Debate**

15.15 **Break**

Hall 2

Wednesday, 13.15 - 14.15

26. Toxicity- and Safety in Nanomedicine

Chair **Dr. Silke Krol**, Senior Editor European Research Services, Münster, (DE) cofounder and CEO of Encyotos BV, Enschede, Visiting Scientist at the Mesa-laboratory, University of Twente (NL)

About The complexity of nanodrugs presents an additional dimension for the definition and regulation of toxicity and to guarantee the safety. Both the third dimension as well as the changing properties during decomposition and metabolism of the nanomaterials can induce adverse effects during the complete lifecycles of the nanodrug.

13.15 **3D Printing of Medical Devices: Issues of Patient Safety**
Dr. Ilise Feitshans JD and ScM and DIR, Director, ESI SAFERNANO European Scientific Institute, Archamps (FR); LLM Candidate, Georgetown University Law Center, Washington DC (USA)

13.30 **Regulatory Safety Evaluation of Nanomedical Products: Key Issues to Refine**
Robert E. Geertsma, M.Sc., Centre for Health Protection, National Institute for Public Health and the Environment (RIVM), Bilthoven (NL)

13.45 **Dispelling the Myth - looking at Benefit/ Risk**
Prof. Dr. med. Marisa Papaluca Amati, Regulatory Science and Innovation Visiting Professor, Imperial College London, Department of Primary Care & Public Health, School of Public Health, Faculty of Medicine, London (UK)

14.00 **Questions and Debate**

Hall 2

Wednesday, 14.15 -15.15

27. Extracellular Vesicles in Nanomedicine – Exosomes (9' speech / 1' First Questions)

Chair **Prof. Dr. med. Raymond Schiffelers**, Professor of Nanomedicine; Division LAB CDL Research; UMC Utrecht; Chairman of the ETP Nanomedicine Executive Board, Utrecht (NL)

About Extracellular vesicles are biological lipid nanoparticles. They are produced by all cell types. They carry essentially all biomolecules that are present in the producing cell and thus contain a complex mixture of lipids, proteins and nucleic acids. They are increasingly recognized as important mediators of intercellular communication in health and disease, where they are able to deliver signals composed of multiple molecules over a distance to affect the acceptor cell. This delivery of biomolecules is an attractive property for nanomedicine applications. Yet their complex composition and the limited understanding of their mechanism of action makes application difficult. This sessions aims to showcase the promises and pitfalls of extracellular vesicles and contrast them to synthetic lipid nanoparticles.

14.15 **Head to Head Comparison of Synthetic and Biological Lipid Nanoparticles**
Prof. Dr. med. Raymond Schiffelers, Professor of Nanomedicine; Division LAB CDL Research; UMC Utrecht; Chairman of the ETP Nanomedicine Executive Board, Utrecht (NL)

14.25 **Extracellular Vesicles: Mechanism of Formation, Characterization and Possible Clinical Use**
Prof. Dr. Kirsten Sandvig, Professor, Institute for Cancer Research, the Norwegian Radium Hospital, Oslo University Hospital Montebello, Oslo (N)

14.35 **Nucleic Acid Based Lipid Nanoparticle Vaccines for Lyme Disease**
Dr. Michael Johnston, PhD, Research Scientist, Head of the Nanomedicines Laboratory, Centre for Oncology, Radiopharmaceuticals and Research, Biologic and Radiopharmaceutical Drugs Directorate Health Canada, Ottawa (CAN)

14.45 **Nanoparticles: Paving the way to Automation and Standardisation in Scalable Isolation and Single-particle Characterisation**
Dr. Stephane Mazlan, Business Development Director (EMEA), Izon Science Europe SAS, Lyon (FR)

15.00 **Questions and Debate**

15.15 **Break**

Hall 1

Wednesday, 15.45 - 17.00

28. Science and Fake Publications - The Current State of Academic Publications

Chair **Prof. Dr. Lajos Balogh**, Editor-in-Chief, "Precision Nanomedicine" Journal, North Andover, MA (USA)

About The selection of articles to trust and detect potential problems requires understanding how values can be identified. What is scientific publishing vs. fake publishing? The session wants to elucidate the current state of academic publications.

What Makes a Publication Good and What Makes a Scientific Journal Good?

15.45 **Prof. Dr. Lajos Balogh**, Editor-in-Chief, "Precision Nanomedicine" Journal, North Andover, MA (USA)

When Journals become Detectives

Spencer McGrath, MA, Director of Scientific Publications American Association for Thoracic Surgery, Beverly, MA (USA)

Beyond Academic Publications: Democs Games and Public Communication

Dr. Donald Bruce, Managing Director, Edinethics Ltd., Edinburgh, Scotland (UK)

Own Experiences as an Author and Reviewer

Prof. Dr. Ling Peng, CNRS Research Director, Equipe Labellisée Ligue Contre le Cancer Centre Interdisciplinaire de Nanoscience de Marseille, Aix-Marseille University, CNRS, UMR 7325 CINaM Marseille (FR)

Questions and Debate

Short break to get together in Hall 1 for Plenary Session

Hall 2

Wednesday, 15.45 - 17.00

29. Pharmacokinetics in Nanomedicine and Nanocarriers

Chair **Dr. Marco Siccardi, PhD**, Head of Toxicokinetics, Modeling and Simulation, Labcorp Early Development Laboratories Ltd., London (UK)

About Understanding the pharmacokinetics and biodistribution of nanocarriers is very important for development of such new products and bringing them to the clinic. The fate of different type of nanocarriers, including nanoparticles and extracellular vesicles, are discussed in this session. These discussions include possibilities and pitfalls in the methods used for such investigations.

Biodistribution, Pharmacokinetics and Excretion Studies of Intravenously Injected Nanoparticles and Extracellular Vesicles

Dr. Tore Skotland, Centre for Cancer Biomedicine, Institute for Cancer Research, University of Oslo (N)

Mechanisms of Accumulation of Nanocarriers in the Skin: Relevance to Toxicities

Prof. Dr. Dmitri Simberg, Associate Professor, Translational Bio-Nanosciences Laboratory Department of Pharmaceutical Sciences, Skaggs School of Pharmacy and Pharmaceutical Sciences, University of Colorado, Anschutz Medical Campus, University of Colorado Cancer Center, Developmental Therapeutics Program, Co-Director, Colorado Center for Nanomedicine and Nanosafety (CCNN) (USA)

Modulation of Pharmacokinetics of Dual-targeting Nanomedicines for Brain Disorders Crossing the Blood-brain Barrier

Dr. Bruno Sarmiento, Principal Investigator, Nanomedicines & Translational Drug Delivery – Group Leader i3S - Instituto de Investigação e Inovação em Saúde Universidade do Porto, (PRT)

Flash Nanoprecipitation: a Versatile Platform for Multifunctional Nanocarriers

Dr. Carolin Tetyczka, Research Center Pharmaceutical Engineering GmbH (RCPE), Graz (AT)

Questions and Debate

Short break to get together in Hall 1 for Plenary Session

Wednesday, 17-15 - 18.45

17.15 **30. The Regulatory Authorities' Voice Panel 2023**

Chair **Dr. Sarah A. Ibrahim**, Associate Director for Stakeholder and Global Engagement.
Office of Generic Drugs, FDA Center for Drug Evaluation and Research, Silver Spring, MD (USA)

About The international regulatory authorities address the participants of the summit to create trust and mutual understanding between all stakeholders in nanomedicine and the regulatory authorities, lowering the barriers for mutual contact at early stage of projects. Short statements and questions from the participants will elucidate the needs in the further development of precision medicine. Short statements of the experts will be put at discussion.

Invited participants:

Dr. Wenlei Jiang, Senior Advisor for Innovation and Strategic Outreach Office of Research and Standards, Office of Generic Drugs CDER/FDA, Silver Spring (USA); **Prof. Dr. Huan Meng, PhD** Professor, National Center for Nanoscience and Technology (NCNST) Beijing, (CN); **Dr. Michael Johnston, PhD**, Research Scientist, Head of the Nanomedicines Laboratory, Centre for Oncology, Radiopharmaceuticals and Research, Biologic and Radiopharmaceutical Drugs Directorate Health Canada, Ottawa (CAN) and further speakers. (A separate folder with all speakers will be available at the Summit.)

18.45 **Closing Comments by the Organizers**

19.00 **End of Summit**

20.00 **Light Farewell Dinner at Restaurant Brauerei**

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Editor: Dr. med. h.c. Beat Löffler, MA

Portraits of the Joining Organizers of Excellence Contributing with a Session

The Phospholipid Research Center Heidelberg, Germany

Phospholipid Research Center (PRC) was founded in 2006 by renowned international scientists, each of them conducting research in phospholipids, and with the support of Lipoid GmbH and Phospholipid GmbH. Both companies have continued providing financial donations to the PRC to this day. In the interest of an open and fruitful dialogue between all scientists and developers involved in phospholipids throughout the world, the PRC was conceived as an independent non-profit organization from the very beginning. Since 2006, the PRC has been funding research on phospholipid excipients for pharmaceutical and cosmetic use. The aim is to expand the knowledge on pharmaceutical and technical applications of phospholipid excipients, their ability to improve, for example, the bioavailability and tolerability of active pharmaceutical ingredients in oral, topical, pulmonary, and parenteral dosage forms, and their use as active ingredients. Individual researchers and research groups from all around the world are therefore encouraged to submit a research proposal to apply for funding of research for non-commercial purposes. Especially PhD and Postdoc projects at academic institutes are in focus. More information can be found on www.phospholipid-research-center.com PRC—Connecting the World of Phospholipids.

Liposome Research Days, Vancouver, Canada

Liposomes Research Days (LRD) was founded in 1990 by Hans Schrier at a meeting in Gainesville Florida. International LRD meetings have been held approximately every two years for the last 32 years, rotating between Europe, North America and Asia. LRD meetings are organized at each location by a volunteer group of internationally recognized scientists specializing in liposome and lipid nanoparticle basic research and translation, and in lipid membrane biophysics. It is a loosely organized non-profit organization that honors a senior member of the organization each meeting with the awarding of the prestigious A.D. Bangham FRS Life Achievement Award. Prizes for are also awarded each meeting to junior researchers judged to have the best quality posters. The last LRD meeting was held in Vancouver, Canada in 2022 with over 300 international

attendees from academia and industry in attendance. For 2023, the LRD shall have a session during the CLINAM Summit in Basel. <https://www.nanomedicines.ca/lrd-2022/#about>
International Association for Pharmaceutical Technology (APV), Driver of Pharmaceutical Progress
 APV is the independent, international and interdisciplinary scientific organization focusing on pharmaceutical technology and industrial pharmacy. Our goal is to deepen the understanding in scientific research and practical knowledge in the areas of development, manufacturing, analysis, quality assurance, distribution and use of pharmaceuticals as well as medical devices and to educating all relevant professionals in order to provide effective and save health products for patient care now and in future. <https://www.apv-mainz.de/pharma-verfahrenstechnik/>

Registration for the Summit

ONLINE REGISTRATION ONLY. Payment by credit card (MasterCard or VISA)

The registration for entire programme, proceedings, lunches and coffee breaks.

Currency is EURO	3 Days	1 Day	Networking Dinner: All participants MO 9.10. 70.00 € (cultural events / CLINAM Dwarf Award 2023) Speakers Dinner: & Special Guests upon Invitation TUE 10.10. Light Farewell Dinner: WED 11.10 60.00 €	
Virtual Participation	360.00 €			
Academy, NPO	750.00 €	390.00 €		
Industry & Government	1'400.00 €	800.00 €		
Students	360.00 €			
Between 01/07/2023 and 31/08/2023: 50% of fee will be charged. After 31/08/2023: the whole amount for the cancelled registration will be charged.				

Important Information for Poster Presenters

Posters in A3

Due to reduced space in the Novartis Conference Center the **presenters are asked to bring with them** their poster in **format A3 (size 42 cm high and 20,5 cm wide)** in highest possible resolution.

Digital promotion online and In Participant's Documentation

All Posters will be available **online on the CLINAM website** and on **all USB-sticks of the Summit participants**. By click on name or poster number, members are guided directly to the relating poster.

Inclusion in Proceedings of the Summit

CLINAM will publish the Abstracts, CV's and Head Picture in the Proceedings of the Summit and list all presenters in the Programme.

Small Speeches for Poster Presenters

Every poster presenter gets in the Session "Small Speeches" 3 minutes to explain orally the poster. There will be 3 sessions due to more than 100 posters. Specific timing will be communicated to all poster presenters before the summit.

Posters Presentation and Installation

Advice for installation: Posters must be installed on the first summit day between 06.30 and 08.00 am. All Poster Participants **hang their own poster in Format A3** to the assigned pin wall. You will be supported by the staff.

Poster Prizes

For the Poster Prizes there shall be 3 Categories. For each Category there will be 3 prizes.

1. Basic Nanomedicine; 2. Translational Nanomedicine 3. Nanotoxicology & Nano-Bio Characterization; Enabling Technologies; Regulatory and Societal Affairs, Networking and Financing.

The poster prizes are sponsored by the **EMPA**, Switzerland. In addition to that the publisher **Wiley** offers two prizes in the form of book vouchers worth 200 €, sponsored by their Journals “Advanced Therapeutics” and “Advanced NanoBioMed Research”.

108 Poster Presentations CLINAM 2023

	Last Name	First Name	Affiliation	Title of Presentation
1	Alston	Amy Barton	Vifor Pharma, Glattbrugg (CH)	Pragmatic Challenges in Using in Silico Modeling to Evaluate the Pharmacokinetics of Iron-carbohydrate Products
2	Arabi	Leila	Nanotechnology Research Center, Mashhad University of Medical Sciences (IR)	Anti-tumor Efficacy of PEGylated Liposomal Doxorubicin Targeted with CREKA Peptide in Murine Melanoma Model
3	Åslund	Andreas	SINTEF Industry, Trondheim (NO)	NaDeNo – Unleashing the Potential of Hard-to-deliver Drugs
4	Åslund	Andreas	SINTEF Industry, Trondheim (NO)	Targeted Nano-formulations for Treatment of MRSA: A multicomponent platform for nano-formulated treatment of resistant microbial infections (LeadtoTreat)
5	Ayala-Nunez	Vanesa	EMPA, Switzerland (CH)	Dynamics of Biodegradation of Iron Carbohydrates in Macrophages, a Clue to Understand their Therapeutic Effect
6	Batalha	Iris	Institute for Bioengineering of Catalonia (IBEC) (ESP)	Nanobiotics for Mycobacterial Infections: ‘It’s the little things that matter the most’
7	Beck	Katharina	Institute of Pharmaceutical Sciences, University of Freiburg (DE)	Antimicrobial Peptides: Lipid Clustering and Leaky Fusion in PG/PE Model Vesicles
8	Benderski	Karina	Institute for Experimental Molecular Imaging, Faculty of Medicine, RWTH Aachen, Aachen(DE)	Development and Characterization of Syngeneic Tumor Models for Hepatocellular Carcinoma in Immunocompetent Mice
9	Borgos	Sven	Department of Biotechnology and Nanomedicine, SINTEF Industry, Trondheim (NO)	Polyethylene Glycol (PEG) as a Broad Applicability Marker for LC-MS/MS-based Biodistribution Analysis of Nanomedicines
10	Bossart	Jonas	EMPA, Switzerland (CH)	Uncovering the Dynamics of Cellular Responses Triggered by Iron-carbohydrate Complexes in Human Macrophages using Quantitative Proteomics and Phosphoproteomics
11	Böttger	Roland	CureVac Tübingen (DE)	Stabilization of mRNA Vaccines by Lyophilization
12	Brain	Danielle	Department of Pharmacology and Therapeutics, Institute of Systems and Molecular Biology, University of Liverpool, Liverpool (UK)	Assessment of Cell Phenotype and Gene Expression Changes, following Repeat Exposure to the NRTIs FTC, 3TC and Long Acting Polymer Linear Poly(FTC) – Relevance to Subcutaneous Administration of Long-acting Therapeutics
13	Bruckdorfer	Thomas	Iris Biotech GmbH, Marktredwitz (DE)	From Bioengineering to Surface Modification A Conceptual Overview of Linkerology® Methodologies

	Last Name	First Name	Affiliation	Title of Presentation
14	Casanova	Marion	Centre Interdisciplinaire de Nanoscience de Marseille (FR)	Self-assembling Supramolecular Dendrimer Nanosystems as Potent Antibacterial Candidates Against Drug-resistant Bacteria and Biofilm
15	Chali	Sharafudheen Pottanam	MaxPlanck-Institut für Polymerforschung, Mainz (DE)	Emulsion Templated Protein Nanocapsule Formation by Interfacial Denaturation for the Efficient Encapsulation and Delivery of Adjuvants for Cancer Immunotherapy
16	Csaba	Noemi	University of Santiago de Compostela (ESP)	A multi-stage Pulmonary Drug Delivery System Based on Sporopollenin
17	Dasgupta	Anshuman	Institute for Experimental Molecular Imaging, RWTH Aachen (DE)	Nonspherical Microbubbles for Ultrasound-Assisted Drug Delivery to Brain
18	de Weerd	Sander	Groningen Research Institute of Pharmacy, University of Groningen (NL)	Developing Biomimetic Nanoparticles as Drug Delivery System in Acute Myeloid Leukemia (AML)
19	Deuker	Mareike	Max Planck Institute for Polymer Research, Mainz (DE)	Interaction of Anti-PEG Antibodies with PEG
20	Dézi	László	Nanomedicine Research and Education Center, Dep. of Translational Medicine, Semmelweis University, Budapest (HU)	Expression of Cytokines in PBMC and Spike Protein Coding mRNA in Various Tissues of the Pig after Comirnaty Vaccination: Potential Mechanisms of Long Term Adverse Events
21	Dietz	Laura	Dep. of Dermatology, University Medical Center Mainz and Max Planck Institute for Polymer Research, Mainz (DE)	Forming of a Protein Corona on Extracellular Vesicles increases Uptake into Immune Cells
22	Dreier	Philip	Department of Chemistry, Johannes Gutenberg University, Mainz (DE)	PEG Lipid Isomerization as a Selective Tool against Anti-PEG Antibody Recognition in Lipid Nanoparticles
23	Duro	Aroa	Curapath, Parque Tecnológico, Valencia(ESP)	PEG Alternatives Based on Bioinspired Polymers with Shielding Properties as Lipid Nanoparticle (LNP) Components
24	El-Safy	Sara	Institute for Experimental Molecular Imaging, RWTH Aachen University Clinic, Aachen (DE)	Continuous Manufacturing of PEGylated Liposomes: Tailoring Sizes for Diverse Clinical Applications
25	Elshafei	Asmaa Said Sayed	Institute for Experimental Molecular Imaging RWTH Aachen University Clinic, Aachen (DE)	Enhancing tumour-targeted Drug Delivery by DMOG-induced Vascular Promotion
26	Esteban-Pérez	Sergio	Curapath, Parque Tecnológico, Valencia(ESP)	Polymeric Nanoparticles: High throughput Screening for Finding the Right Polymer for the Required Genetic Material

	Last Name	First Name	Affiliation	Title of Presentation
27	Färber	Nicolas	Experimental Physics I, Institute of Physics, University of Augsburg, Augsburg (DE)	Measuring Lipid Order to Assess Cell Membrane Permeability, Lipid Nanoparticle Stability and Membrane drug Interaction
28	Fuchs	Alexander	Julius-Maximilians- University Würzburg, Dep. of Chemistry and Pharmacy (DE)	Cationic Polymer Nanogels for Nucleic Acid Delivery
29	Fuß	Fabian	Dep. of Chemistry, Johannes Gutenberg University, Mainz (DE)	Evolving Polyethylene Glycol (PEG): Isomerization of PEG Suppresses Immune Recognition
30	Galanakou	Christina	Centre Interdisciplinaire de Nanoscience de Marseille, CNRS UMR 7325 Marseille (FR)	Dendrimer Nanosystems Hijack Tumor-secreted Extracellular Vesicle for siRNA Delivery
31	Gao	Han	Dep. of Biomedical Engineering-FB40, University of Groningen (NL)	Virus Mimicking Polysaccharide Nanocomplex with Macrophage Targeting Capability for Potent Gene Silencing
32	Gräfen	Barbara	Department of Dermatology, University Medical Center Mainz (DE)	Modulation of the Tumor Microenvironment via pH-regulating Liposomes
33	Gurcan	Serra	Precision NanoSystems, Vancouver, BC, (CAN)	Well Characterized Lipid Nanoparticle Library Accelerates Development of Next Generation Genomic Medicine
34	Hak	<u>Sjoerd</u>	SINTEF Industry, Department of Biotechnology and Nanomedicine, Trondheim (NO)	Performance of a Novel high-throughput Nanoparticle Formulation Set-up
35	Haroon	Hajira Banu	School of Pharmacy, Newcastle University, Newcastle (UK)	Modulation of Immune Response through Dendrimer Functionalization
36	Hauck	Adrian	Lehrstuhl für Makromolekulare Chemie Universität Würzburg (DE)	Triggerable Polycarbonates as Potential Immunodrug Nanocarriers
37	Heaton	Bethany	Institute of Systems and Molecular Biology, University of Liverpool (UK)	Investigating the Immunological Responses of Hepatic and Immune Cells linked to the Bioretention of Iron Oxide Nanoparticles
38	Hegde	Manasa	Manipal Academy of Higher Education (MAHE) Manipal - Karnataka (IND)	Dual Drug Loaded Targeted Delivery of Multifunctional Liposome Against Human Glioma Orthotopic model
39	Hu	Lifan	Max Planck Institute for Polymer Research. Mainz (DE)	Surface-functionalized Human Serum Albumin for Modulating Tumor Microenvironment

	Last Name	First Name	Affiliation	Title of Presentation
40	Hutter	Nicole Martina	Department of Chemistry, Johannes Gutenberg-University Mainz (D)	Multicomponent Supramolecular Platform for the Design of Glycoconjugate Antitumor Vaccines
41	Iversen	Tore-Geir	Oslo University Hospital (NO)	Preclinical Efficacy Studies on Cabazitaxel Loaded Poly(2-alkyl cyanoacrylate) Nanoparticle Variants
42	Jefts	Lloyd	Precision NanoSystems, Vancouver, BC, (CAN)	Strategies for Producing Clinical and Commercial RNA-LNP Drug Products
43	Jung	Carina	Max Planck Institute for Polymer Research Mainz (DE)	Achieving Dendritic Cell Subset-specific Targeting in vivo by site-directed Conjugation of Targeting Antibodies to Nanocarriers
44	Juriga	David	Semmelweis University, Budapest (HU)	Effect of Polyaspartamide-based Polyelectrolytes on Cellular Uptake
45	Kang	Jinhong	Max Planck Institute for Polymer Research, Mainz (DE)	Emulsion Templated Protein Nanocapsule Formation by Interfacial Denaturation for the Efficient Encapsulation and Delivery of Adjuvants for Cancer Immunotherapy
46	Kaul	Laurine	University of Freiburg, Institute of Pharmaceutical Sciences, Department of Pharmaceutics, Freiburg (DE)	Repurposing Cu(DDC) ₂ -liposomes as Antibacterial Agent for Staphylococci Infections
47	Khorshid	Shiva	Department of Nanomedicine and Theranostics, Institute for ExMI, Faculty of Medicine, RWTH Aachen (DE)	Designing Nanomedicine Libraries via Custom-made 3D-printed Microfluidics for Applications in Hematological Malignancies
48	Kim	Bumjun	Chemical and Biological Engineering Department, Princeton University (USA)	Development and Optimization of Next-generation Lipid Nanoparticles for in-situ CAR-T Production
49	Koehler	Jonas	Institute of Pharmaceutical Sciences, University of Freiburg (DE)	Preparation of Small Multilamellar Vesicles Using Dual Centrifugation
50	Kratochvíl	Zdeněk	Department of Chemistry and Biochemistry, Mendel University in Brno (CZE)	Development of pH-responsive Lipid-based Nanotransporters aimed at Effective siRNA Delivery
51	Kravicz	Marcelo	School of Medicine and Surgery, University of Milano-Bicocca (IT)	Functionalized Liposomes for Automated Fluorine-18 Surface Radiolabeling and in vivo PET Imaging
52	Krehan	Joshua	Department of Chemistry, Johannes Gutenberg University Mainz (DE)	Overcoming Immune Suppression: Repolarizing Tumor-Associated Macrophages with pH-Modulating Capsules for Enhanced Cancer Therapy

	Last Name	First Name	Affiliation	Title of Presentation
53	Kromer	Adrian	Ludwig-Maximilians-Universität, Dep. of Pharmacy, München (DE)	Nebulization of siRNA: Estimating the Impact of the Transition from Polyplex to Micelleplex
54	Lopes	Cátia	Institute for Bioengineering of Catalonia, Molecular Bionics Group, Barcelona (ESP)	Unravelling Gene Therapy's Potential in Alzheimer's Disease via the Brain-Blood Barrier
55	López Cerdá	Sandra	Division of Pharmaceutical Chemistry and Technology, Faculty of Pharmacy, University of Helsinki (FIN)	In Vitro Synergistic Effect of Dual-loaded Budesonide and Serpine1 siRNA Lipid-polymer Hybrid Nanoparticles for the Treatment of Inflammation and Fibrosis in Macrophages Involved in Tissue Injury Conditions
56	Loscertales	Ester	Grupo de Física Nuclear, EMFTEL & IPARCOS, Universidad Complutense de Madrid (ESP)	Chemo Radiation Therapy Using Lipid Nanocarriers
57	Lubitz	Larissa	ABNOBA GmbH, Niefern-Öschelbronn (DE)	Optimization of Process Parameters for Innovative Liposome Production from Nanoemulsions
58	Maheshwari	Anshika	Department of Microbiology, Tumor and Cell Biology, Karolinska Institutet, Stockholm, Sweden (SWE)	Calcium Phosphate Nanoparticles as Potential Carriers for Vaccines
59	Meier	Florian	Postnova Analytics GmbH, Research & Applications, Landsberg (DE)	Multi-detector Field-Flow Fractionation for the Assessment of Critical Quality Attributes of Nano-sized Drug Delivery Systems
60	Meiser	Sophie Luise	Collaborative Research Center 1066, Nano-dimensional polymer therapeutics for tumor therapy, Mainz (DE)	Microneedle-Enhanced Delivery of Nanocrystalline Imiquimod for Transcutaneous Immunization– Manufacturing, Characterization and Permeation
61	Mejias	Victor	Institute for Bioengineering of Catalunya (IBEC), The Barcelona Institute of Science and Technology (BIST) Barcelona (ESP)	Unleashing MR1's Potential: Peptide-functionalised Polymersomes for Targeted Tuberculosis Therapy
62	Mietzner	Raphael	Dep. of Pharmaceutical Technology and Institute of Medical Microbiology and Hygiene, University of Regensburg (DE)	PEG Hydrogel Toolbox – Realizing Various Release Timeframes of Vaccine Nanoparticles from Hydrogels Intended for Improved Quality of HIV Immunization
63	Mihyar	Rahaf W.	Dep. of Nanomedicine and Theranostics, Institute for Experimental Molecular Imaging, University Hospital RWTH Aachen, (DE)	Evaluating Formulation and Process Parameters for Lyophilisation of Pi electron Stabilized Polymeric Micelles

	Last Name	First Name	Affiliation	Title of Presentation
64	Mlynska	Agata	Laboratory of Immunology, National Cancer Institute, Vilnius (LTU)	Nanotechnologies for Targeting the Tumor Microenvironment in the Colorectal Cancer
65	Mohammadi	Marzieh	School of Pharmacy, MUMS, Mashhad (IRN)	Local Delivery of Lipid Liquid Crystalline Formulation of Doxorubicin to Cancer Cells
66	Mora	Patricia	Technion Israel Institute of Technology (IL)	Brain-targeted Liposomes Loaded with Anti-alpha-synuclein Monoclonal Antibody for Treating Parkinson's Disease in its Early Stages
67	Mpekris	Fotios	University of Cyprus and University of Nicosia (CYP)	Modulating the Tumor Microenvironment with Nanomedicine and Metronomic Therapy to Enhance Treatment Efficacy of Immunotherapy
68	Murgia	Denise	Laboratory of Nanotechnology for Precision Medicine, Fondazione Istituto Italiano di Tecnologia, Genoa (IT)	Hierarchic Polymeric Microplates for Delivery of Small Molecules and Nanoparticle
69	Nesterkina	Mariia	Department of Drug Design and Optimization (DDOP) Helmholtz Institute for Pharmaceutical Research Saarland (HIPS), Saarbrücken (DE)	Thermoresponsive Chiral-nematic Liquid Crystals as Multifunctional Nanostructured Material for Skin Drug Delivery
70	Okwelogu	Emmanuel	Nano-Omics team, Nanomedicine Lab, The University of Manchester (UK)	Exploitation of the 2D Graphene Oxide Biomolecule Corona in Secretome-based Cancer biomarker discovery
71	Panagi	Myrofora	Cancer Biophysics Laboratory, University of Cyprus (CYP)	Re-engineering the Tumor Microenvironment with Polymeric Micelles to Improve the Efficacy of Nano-immunotherapy in Breast Cancer
72	Paul	Alexandra	School of Cancer and Pharmaceutical Sciences King's College London, London (UK)	A new Aptamer Delivery System Transporting Nucleic Acids to T-cells for Glioblastoma Immunotherapy
73	Peng	Ling	Centre Interdisciplinaire de Nanoscience de Marseille, Aix-Marseille University, CNRS (FR)	Modular and Adaptive Self-assembling Dendrimers for Nanomedicine
74	Pilger	Yannick	Department of Chemistry and Pharmacy, Julius-Maximilians Universität Würzburg (DE)	Macromolecular Immunodrug Delivery Guided by Self-immolative Nanobody Modifications
75	Portioli	Corinne	Laboratory of Nanotechnology for Precision Medicine, Fondazione Istituto Italiano di Tecnologia, Genoa (IT)	Advanced Nano and Micro Medicines to Tackle Neurological Disorder

	Last Name	First Name	Affiliation	Title of Presentation
76	Pottanam Chali	Sharafudheen	Max Planck Institute for Polymer Research, Mainz (DE)	Emulsion Templated Protein Nanocapsule Formation by Interfacial enaturation for the Efficient encapsulation and Delivery of Adjuvants for Cancer Immunotherapy
77	Reichel	Lien Sabrina	Laboratory of Organic and Macromolecular Chemistry (IOMC), Friedrich Schiller University Jena, Jena (DE)	Optimization of Mixed Micelles Based on Oppositely Charged Block Copolymers by Machine Learning for Application in Gene Delivery
78	Resch	Susanne	BioNanoNet Forschungsgesellschaft mbH, Graz (AT)	Cluster Decorated Functional DNA Origami-based Biosensor: Towards Safe Nano-innovations
79	Rouatbi	Nadia	King's College London (UK)	In Vivo Application of CRISPR/Cas9 Gene Editing Using Lipid Nanocarriers for Therapeutic Immune Target Identification in Glioblastoma
80	Ruppl	Anna	Albert-Ludwigs-University Freiburg Dep. of Pharmaceutical Technology and Biopharmacy Freiburg (DE)	Lyophilization of mRNA Lipid Nanoparticles
81	Sanjurjo	Lucía	CIMUS (ES)	Enhancing the Power of Nanobodies through Nanotechnology: Extending Half-Life and Reaching Intracellular Targets
82	Schaaf	Maximilian	Max Planck Institute for Polymer Research, Mainz (DE)	A Versatile Functionalization Platform for Liposomes and Extracellular Vesicles
83	Scheper	Johanna	BioNanoNet Forschungsgesellschaft mbH, Graz (A); Grace Bio S.L, Barcelona (ESP)	PHOENIX-OITB – A Single Entry Point to Develop or Upgrade Innovative Nanopharmaceuticals
84	Schmidt	Julian	Dep. of Chemistry, Johannes Gutenberg University, Mainz (DE)	A Non-immunogenetic PEG Derivate: Improving the Evasion of the Immune Response by Introducing Sterically Demanding Side Chains
85	Schneider	Paul	Institute of Translational Immunology, University Medical Center, Mainz (DE)	Development and Characterization of Syngeneic Tumor Models for Hepatocellular Carcinoma in Immunocompetent Mice
86	Schorr	Kathrin	University of Regensburg, Dep. of Pharmaceutical Technology, Regensburg (DE)	Experimental Approach for the Quantitative Characterization of Multivalent Ligand-receptor Interactions of Polymeric Nanoparticles with Target Cells
87	Schulz	Dominik	Johannes Gutenberg-University, Department Chemistry, Mainz (DE)	Synthesis and Functionalization of Polyethylene Glycol (PEG) Isomers: Reinventing a Well-known Polymer
88	Schunke	Jenny	Department of Dermatology, University Medical Center of the Johannes Gutenberg University Mainz (DE)	Multicomponent Adjuvantation of Antigen-based Nanocapsules Using Site-directed Click Chemistry Crosslinking for the Treatment of Melanoma

Last Name	First Name	Affiliation	Title of Presentation
89	Shalmani	Armin Azadkhah Dep. of Nanomedicine and Theranostics, Institute for Experimental Molecular Imaging, RWTH Aachen University Hospital, Aachen (DE)	Polymeric Micellar Platform with Controlled Release Kinetics for Taxane and Corticosteroid Cancer Combination Therapy
90	Silvestre	Isabelle Florence Institute of Immunology, University Medical Center Mainz (DE)	Multicomponent Supramolecular Platform for the Design of Glycoconjugate Antitumor Vaccines
91	Sousa	Flavia Adolphe Merkle Institute, University of Fribourg (CH)	IL-12 Delivery through Immunostimulatory Nanoparticles Enhances Inflammatory Response for Glioblastoma Treatment
92	Speth	Kai Max Planck Institute for Polymer Research, Mainz; Dermatology Clinic, University Medical Center of the Johannes Gutenberg-University Mainz (DE)	Proteomics-guided Intracellular Trafficking Analysis Reveals Time-dependent Protein Corona Changes and the Intracellular Pathway
93	Stein	René Section of Experimental Oncology und Nanomedicine (SEON), ENT-Department, University Hospital Erlangen (DE)	Gold-coated Superparamagnetic Iron Oxide Nanoparticles for Cardiovascular Applications
94	Steponkiene	Simona Biomedical Physics Laboratory, National Cancer Institute, Vilnius, (LVA)	Nanoparticle-loaded Mesenchymal Stem Cells for Tumor-Tropic Delivery of Theranostic Agents
95	Suárez	Yael Department of Pharmacy, Science for Life Laboratory, Uppsala University, Uppsala (SWE)	Microfluidic Device for the Investigation of Nanoparticle Dynamics in the Healthy and Diseased State of the Gastrointestinal Tract
96	Svensson	Malin University Medical Center, Children's Hospital, Mainz (DE)	Comparative study of Adjuvants and their Synergistic Potential for the Stimulation of Dendritic Cells (DC) and Liver Non-parenchymal Cells
97	Tagaras	Nikolaos EMPA Switzerland (CH)	Intelligent single-atom Nanozymes for Effective and Safe Therapy of Inflammatory Diseases in Pregnancy
98	Utami	Rifka King's College London (UK)	Self-assembling Nasal Gel for Enhanced Delivery of Ghrelin to the Central Nervous System for Amyotrophic Lateral Sclerosis Therapy
99	Vilar Hernandez	Mireia LipoCoat B.V, Enschede (NL); Dep. of Molecules and Materials, University of Twente, Enschede (NL)	Protein Corona Study of Tunable Lipid Bilayer Coated Nanoparticles

	Last Name	First Name	Affiliation	Title of Presentation
100	Voljnikova	Michaela	Central European Institute of Technology, Brno University of Technology, Brno (CZE) and Department of Chemistry and Biochemistry, Mendel University i Brno (CZE)	Theranostic Bimodal Lipid-based Nanomedicines for Effective Cancer Treatment
101	Wang	Shiqi	University of Helsinki (FIN)	A Biomimetic Dual-drug Loaded Lipid Nanocarrier Enhances Apoptosome Assembly for Cancer Therapy
102	Wilhelmy	Christoph	Mainz University (DE)	Polysarcosine-functionalized mRNA Lipid Nanoparticles Tailored for Immunotherapy
103	Xiaodong	Yu	Nanomedicine Translational Research Program, Centre for NanoMedicine, Yong Loo Lin School of Medicine, National University of Singapore, (SGP)	Targeted Regulation of Ceramide Synthesis Ameliorates Non-alcoholic Fatty Liver Disease
104	Yu	Meiling	Institute of Pharmaceutical Science, Faculty of Life Sciences & Medicine, King's College London (UK)	Assessing Brain Targeting Efficiency of Ionisable Lipid Nanoparticles Encapsulating Cas9 mRNA/gGFP Following Different Routes of Administration in Mice
105	Zam	Alaa	Institute of Pharmaceutical Science, and London Centre for Nanotechnology King's College London (UK)	Developing Nucleic Acid-based Therapies Targeting Immune Checkpoints in Glioblastoma Microenvironment using Lipid Nanoparticles
106	Zeyn	Yanira	University Medical Center Mainz, Department of Dermatology, Mainz (DE)	Comparative Study of Adjuvants and their Synergistic potential for the Stimulation of Dendritic Cells (DC) and Liver Non-parenchymal Cells
107	Zhao	Bonan	Division of Bio-Therapeutics, LACDR, Leiden University (NL)	Precise AMPK Activator Delivery and Antibody Conjugation via Novel Core-Shell Polymer Brush for Enhanced Combined Immunotherapy
108	Zlotver	Ivan	Laboratory of Pharmaceutical Nanomaterials Science, Technion - Israel Institute of Technology, Haifa (IL)	Glucosylated Hybrid TiO ₂ /Polymer Nanomaterials for Actively Targeted Sonodynamic Therapy of Cancer

Venue for the Summit

The Architect Frank Owen Gehry, is a Canadian-born American architect and designer with world-renowned buildings. His style is considered deconstructivism, a movement in postmodern architecture where elements of the design appear to be fragmented. His architecture is typically characterized by flowing lines, and surfaces that vary from titanium cladding to metal Blobitectural modular parts.



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Exhibitors at the 14th European and Global Summit for Clinical Nanomedicine 2023

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Joint Organizers Table



European Foundation for Clinical Nanomedicine
Switzerland



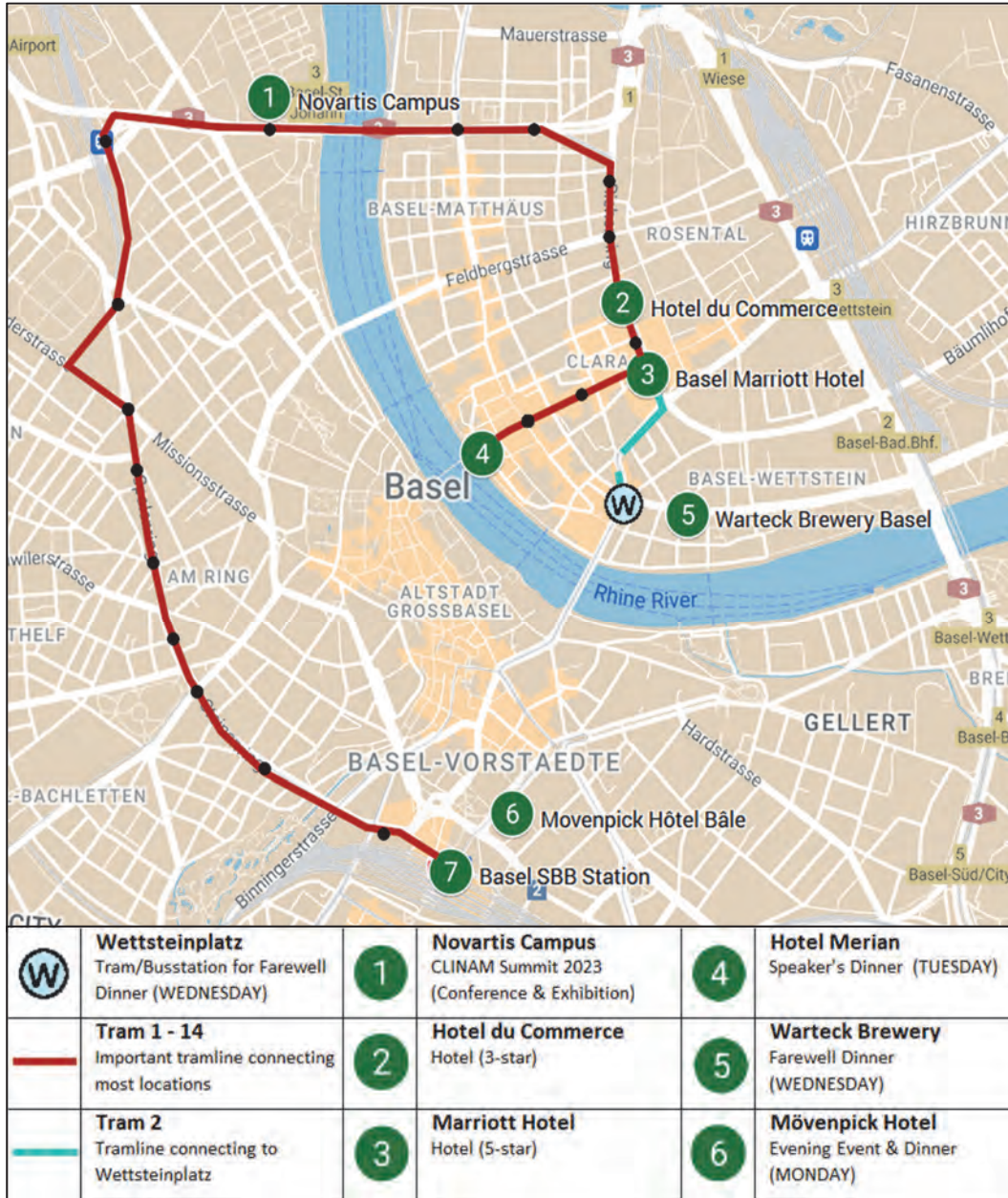
LIPOSOME RESEARCH DAYS

International meetings on liposomes, lipidic nanoparticles and membrane biophysics



Phospholipid Research Center

Map for all Locations during the Summit



How to get to the Novartis Campus from the Hotel:

When leaving from the hotels, take **Tram number 14** from station **Messeplatz** into the **direction Dreirosenbrücke**. Tram 14 will change into Tram 1, stay on the same Tram. **The 5th station is Novartis Campus**.

Tram instructions (MONDAY Evening event & Dinner):

When leaving from Novartis Campus, take **Tram 1** into the **direction Bahnhof SBB**. After 11 stops, **get out at Bahnhof SBB**. Cross the street towards **Hotel Mövenpick** (80-meter-high white-building)

Tram Instructions (TUESDAY Dinner):

When leaving from Novartis Campus, take **Tram 1** into the **direction Dreirosenbrücke**. At this stop, tram 1 will change into tram 14. Stay on the same tram. After 8 stations, **get out at Rheingasse**. Afterwards, you stand in front of **Hotel Merian**.

Tram Instructions (WEDNESDAY Farewell Dinner):

When leaving from Novartis Campus, take **Tram 1** into **direction Dreirosenbrücke**. This tram will change into tram 14. Stay on the same tram. After 5 stops, **get out at Messeplatz and change to Tram 2** into **direction Bahnhof SBB**. Get out at the **first stop at Wettsteinplatz** and **walk 4 minutes** to the Warteck Brewery (walking from Messeplatz takes 12 minutes).

From Tram-Station Novartis Campus to Summit Hall



See the journal at <https://precisionnanomedicine.com/>

PRNANO - The official journal of CLINAM and ISNM

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About CLINAM'S Goals

<p>CLINAM was co-founded and registered 2007 in Switzerland by Beat Löffler and Patrick Hunziker. Its goal is to contribute to patients and society by</p>	
<ul style="list-style-type: none"> • Uniting the global community of nanomedicine and targeted medicine • Performing nanomedical and clinical research and promoting its clinical applications • Setting nanomedicine into the broad context of related medical procedures, technologies and therapeutic trends • Promoting and supporting the global Transfer and sharing of knowledge 	<ul style="list-style-type: none"> • Acting as non-for-profit neutral platform for all stakeholders and authorities in nanomedicine and related fields • Networking in nanomedicine and targeted medicine by international summits and debate-seminars • Bringing together experienced scientists and the young next generation researchers to continue the research of excellence

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