

## September 16

## Opening Remarks

09:00 - 09:15

## Keynote Lecture

09:15 - 10:00

**KL-1** Controlling the biodistribution of liposomes through combined formulation and manufacturing strategies.Yvonne Perrie*Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Glasgow, Scotland*

## ..... Coffee Break .....

10:00 - 10:15

## Invited Lecture

10:15 - 10:40

**IL-1** Design of intracellular environment-responsive lipid-like material for nucleic acid-based immune-engineeringHidetaka Akita*Laboratory of DDS Design and Drug Disposition, Graduate School of Pharmaceutical Sciences, Chiba University, JAPAN*

10:40 - 11:05

**IL-2** Solvent-assisted active loading technology (SALT) and phospholipid-free small unilamellar vesicles (PFSUVs) for targeted drug deliveryShyh-Dar Li*Faculty of Pharmaceutical Sciences, University of British Columbia*

11:05 - 11:30

**IL-3** Liposomal targeting of glucocorticoids: preclinical and clinical experience in several inflammatory diseasesJosbert M Metselaar*RWTH Aachen University Clinic, Germany*

## ..... Group Photo .....

11:30 - 11:45

## ..... Lunch Break .....

11:45 - 13:00

13:00 - 13:25

**IL-4** Modular platform nanotechnology for siRNA and prodrug deliveryRoy van der Meel*Laboratory of Chemical Biology, Department of Biomedical Engineering and Institute for Complex Molecular Systems, Eindhoven University of Technology, Eindhoven, The Netherlands*

Sep. 16

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13:25 - 13:50

**IL-5 Barcoded Liposomes for Personalized Cancer Medicine: The primary tumor and metastasis respond to different drugs**Avi Schroeder*Israel Institute of Technology, Israel*

13:50 - 14:15

**IL-6 Design of Functional Polymers for Smart Nanomedicine**Nobuhiro Nishiyama<sup>1,2</sup><sup>1</sup>Laboratory for Chemistry and Life Science, Tokyo Institute of Technology, <sup>2</sup>Innovation Center of Nanomedicine (iCONM), Kawasaki Institute of Industrial Promotion, JAPAN..... **Coffee Break** .....

14:15 - 14:30

**Oral Presentation**

14:30 - 14:45

**O-01 Autoantigen-modified liposomes as an immune cell-targetable drug carrier for the treatment of multiple sclerosis**Shohei Takasugi<sup>1</sup>, Kazuki Agata<sup>1</sup>, Naoto Oku<sup>1,2</sup>, Tomohiro Asai<sup>1</sup>, Kosuke Shimizu<sup>1,3</sup><sup>1</sup>University of Shizuoka, Shizuoka, Japan, <sup>2</sup>Teikyo University, Itabashi, Japan, <sup>3</sup>Hamamatsu University, Hamamatsu, Japan

14:45 - 15:00

**O-02 Comparing filtration techniques for scalable manufacturing of liposomal formulations**Cameron Webb, Yvonne Perrie*Strathclyde Institute of Pharmacy and Biomedical Sciences, Glasgow, Scotland*

15:00 - 15:15

**O-03 Efficient delivery of macromolecules by molecular design of cationic lipids**Yusuke Sato, Kazuki Hashiba, Akari Hashiba, Nana Okabe, Hideyoshi Harashima*Hokkaido University, Sapporo, Japan*

15:15 - 15:30

**O-04 Liposomal Formulations: Analytical Techniques from Concept to Final Product**Walter A. Shaw, Paul R.S. Baker, Di Bush, Lisa Connell*Avanti Polar Lipids, Inc., Alabaster, AL, USA*

15:30 - 15:45

**O-05 Cytoplasmic delivery of exogenous IVT-mRNA using lipid-like material**Hiroki Tanaka<sup>1</sup>, Manami Konishi<sup>1</sup>, Nae Takata<sup>1</sup>, Tatsunari Takahashi<sup>1</sup>, Yuta Nakai<sup>2</sup>, Kota Tange<sup>2</sup>, Hiroki Yoshioka<sup>2</sup>, Shinya Tamagawa<sup>2</sup>, Hidetaka Akita<sup>1</sup><sup>1</sup>Graduate School of Pharmaceutical Sciences, Chiba University, Chiba, Japan, <sup>2</sup>NOF CORPORATION, Kawasaki, Japan

15:45 - 16:00

**O-06 A single liposome assay for studying binding of antibodies to PEG chains in an authentic environment on liposomal surfaces**

Rasmus Muenther<sup>1,2</sup>, Esben Christensen<sup>1,2</sup>, Camilla Stavnsbjerg<sup>1,2</sup>, Kasper Kristensen<sup>1,2</sup>,  
Jens B. Simonsen<sup>1,2</sup>, Jannik B. Larsen<sup>1,2</sup>, Thomas L. Andresen<sup>1,2</sup>

<sup>1</sup>Department of Health Technology, Technical University of Denmark (DTU), Kongens Lyngby, Denmark, <sup>2</sup>Center for Nanomedicine and Theranostics, Technical University of Denmark (DTU), Kongens Lyngby, Denmark

16:00 - 16:15

**O-07 Combination of cancer vaccines with liposomal oxaliplatin increased anti-cancer therapeutic efficacy by stimulating antitumor immunity**

Taro Shimizu, Shunsuke Takese, Yu Ishima, Tatsuhiro Ishida

Tokushima University, Tokushima, Japan

**Poster Presentation**

Odd numbers: 16:30 - 17:15

Even numbers: 17:15 - 18:00

**P-01 Impact of trastuzumab coating when prototyping immunoliposomes in breast cancer models: the more the merrier?**

Anne Rodallec<sup>1</sup>, Corentin Franco<sup>2</sup>, Robert Stephane<sup>3</sup>, Guillaume Sicard<sup>1</sup>, Sarah Giacometti<sup>1</sup>,  
Brochier Camille<sup>4</sup>, bruno Lacarelle<sup>1</sup>, Philippe Poncelet<sup>2</sup>, Ciccolini Joseph<sup>1</sup>, Fanciullino Raphaelle<sup>1</sup>

<sup>1</sup>SMARTc Unit, CRO2 U-911, Aix Marseille Univ, 27 boulevard Jean Moulin, 13005 Marseille, France, Marseille, France,  
<sup>2</sup>Biocytex, marseille, France, <sup>3</sup>VRCM, AMUTICYT platform, Aix Marseille Univ, 27 boulevard Jean Moulin, 13005 Marseille,  
France, marseille, France, <sup>4</sup>Institut Roche, 30 Cours de l'Île Seguin - F-92650 Boulogne Billancourt Cedex, France., Boulogne  
Billancourt, France

**P-02 pH-sensitive TAT-decorated PEGylated liposome encapsulated silybin: Characterization, in vitro and in vivo anti-tumor evaluation**

Hoda Alavizadeh<sup>1</sup>, Fatemeh Gheybi<sup>1</sup>, Mahdi Rezayat<sup>2</sup>, Mahmoud Reza Jaafari<sup>1</sup>

<sup>1</sup>Mashhad University of Medical Sciences, Mashhad, Iran, <sup>2</sup>Tehran University of Medical Sciences, Tehran, Iran

**P-03 Brain-targeted Drug Delivery using Ultrasound and Lipid-based Microbubbles loading Different Gases**

Daiki Omata, Tamotsu Maruyama, Fumiko Hagiwara

Hagiwara, Lisa Munakata, Tadimitsu Shima, Saori Kageyama, Yuno Suzuki, Kazuo Maruyama,  
Ryo Suzuki

Teikyo University, Tokyo, Japan

**P-04 Behavior of multi-liposomal nanocontainers in the presence of proteins and biomimetic membranes**

Darya Stepanova, Marya Romodina, Andrey Sybachin

Lomonosov Moscow State University, Moscow, Russia

**P-05 DEVELOPMENT OF LIPOSOMAL IRINOTECAN HYDROCHLORIDE USING ACTIVE LOADING TECHNIQUE**

ASHA PATEL

PARUL INSTITUTE OF PHARMACY, VADODARA, INDIA

**P-06 Acceleration of the enhanced permeability and retention effect for delivery of liposomes by treatment with weak current**

Miyuki Mimura, Anowara Khatun, Natsu Nakatani, Tatsuya Fukuta, Kentaro Kogure  
Tokushima University, Tokushima, Japan

**P-07 Lipobrid-based Nanoconstructs for Topical Delivery of Anti-infectives: Evidences of Improved Antimicrobial Efficacy and Dermatokinetic Attributes in Burn Wound Bacterial Infections**

Kanika Thakur<sup>1</sup>, Gajanand Sharma<sup>1</sup>, Bhupinder Singh<sup>1,3</sup>, Sanjay Chhibber<sup>2</sup>, OP Katare<sup>1</sup>

<sup>1</sup>UGC Centre of Advanced Studies, University Institute of Pharmaceutical Sciences, Panjab University, Chandigarh, India, <sup>2</sup>UGC Centre of Excellence in Nano Applications (Biomedical Sciences), Panjab University, Chandigarh, India, <sup>3</sup>Department of Microbiology, Panjab University, Chandigarh, India

**P-08 Lipid-Polymer Hybrid Vesicles for Brain Cancer Theranostics**

Srivani Veeranarayanan<sup>1</sup>, Sheikh Mohamed Mohamed<sup>1</sup>, Yasushi Sakamoto<sup>2</sup>, Rie Suge<sup>2</sup>, Narumi Hirose<sup>2</sup>, Maekawa Toru<sup>1</sup>

<sup>1</sup>Toyo University, Kawagoe, Japan, <sup>2</sup>Saitama Medical University, Moro, Japan

**P-09 Influence of fasudil release rate from liposomes on its therapeutic efficacy against cerebral ischemia/reperfusion injury**

Hirokazu Yamamoto<sup>1</sup>, Yousuke Yamagida<sup>1</sup>, Mio Namba<sup>1</sup>, Tatsuya Fukuta<sup>1</sup>, Mitsuaki Yanagida<sup>2</sup>, Miki Honda<sup>2</sup>, Naoto Oku<sup>1,3</sup>, Tomohiro Asai<sup>1</sup>

<sup>1</sup>University of Shizuoka, Shizuoka, Japan, <sup>2</sup>Juntendo University, Tokyo, Japan, <sup>3</sup>Teikyo University, Tokyo, Japan

**P-10 A novel combination chemotherapy using liposomal DDS**

Momoe Katagiri<sup>1</sup>, Seishiro Morimoto<sup>1</sup>, Naoto Oku<sup>1,2</sup>, Tomohiro Asai<sup>1</sup>

<sup>1</sup>University of Shizuoka, Shizuoka, Japan, <sup>2</sup>Teikyo University, Tokyo, Japan

**P-11 Antitumor effect by epigallocatechin gallate modification on nanoparticle**

Ikumi Sugiyama<sup>1</sup>, Kunihiro Kaihatsu<sup>2,3</sup>, Nobuo Kato<sup>3</sup>, Yasuyuki Sadzuka<sup>1</sup>

<sup>1</sup>Iwate Medical University, Shiwa, Japan, <sup>2</sup>VisGene, Ltd, Osaka, Japan, <sup>3</sup>Osaka University, Osaka, Japan

**P-12 Granagard: a "Smart" Food Supplement, Targets Natural Lipid Antioxidants to the Brain for the Prevention of Neurodegenerative Diseases**

Ruth Gabizon<sup>1,2</sup>, Orli Binyamin<sup>2</sup>, Kati Frid<sup>2</sup>

<sup>1</sup>Department of Neurology, Hadassah University Hospital and Granelix Biotechnologies, Jerusalem Israel, <sup>2</sup>Hebrew University Medical School and Department of Neurology, Hadassah University Hospital

**P-13 Optimal preparation method of Vitamin D<sub>3</sub> encapsulated liposome and possibility of advanced preparations**

Yukako Soma<sup>1</sup>, Ikumi Sugiyama<sup>2</sup>, Yasuyuki Sadzuka<sup>1,2</sup>

<sup>1</sup>Graduate School of Pharmaceutical Science, Iwate Medical University, Shiwa, Japan, <sup>2</sup>School of pharmacy, Iwate Medical University, Shiwa, Japan

**P-14 Development of tissue factor-targeted liposomes for effective drug delivery to stroma-rich tumors**

Kosuke Shimizu<sup>1,2</sup>, Yoshihito Takeuchi<sup>2</sup>, Kazuma Otsuka<sup>2</sup>, Yasuhiro Matsumura<sup>3</sup>, Yasuhiro Magata<sup>1</sup>, Naoto Oku<sup>2,4</sup>

<sup>1</sup>Hamamatsu University School of Medicine, Hamamatsu, Japan, <sup>2</sup>University of Shizuoka, Shizuoka, Japan, <sup>3</sup>National Cancer Center, Kashiwa, Japan, <sup>4</sup>Teikyo University, Itabashi, Japan

**P-15 PEG-G-CSF immunogenicity in mice: Anti-PEG IgM induction**

Nehal E. Elsadek, Taro Shimizu, Tatsuhiko Ishida

*Tokushima University, Tokushima, Tokushima***P-16 The impact of cell-type tropism on the intratumor accumulation of exosomes derived from cancer cells**Sherif E. Emam<sup>1,2</sup>, Hidenori Ando<sup>1</sup>, Shimizu Taro<sup>1</sup>, Tatsuhiko Ishida<sup>1</sup><sup>1</sup>*Tokushima University, Tokushima, Japan*, <sup>2</sup>*Zagazig University, Zagazig, Egypt***P-17 Development of leukocyte-mimetic liposomes via intermembrane protein transfer to overcome inflamed endothelial cell layer**Tatsuya Fukuta<sup>1</sup>, Shintaro Yoshimi<sup>2</sup>, Kentaro Kogure<sup>1</sup><sup>1</sup>*Graduate School of Biomedical Sciences, Tokushima University, Tokushima, Japan*, <sup>2</sup>*Tokushima University Faculty of Pharmaceutical Sciences, Tokushima, Japan***P-18 Observation of nose-to-brain delivery kinetics of macromolecules with polyethylene glycol- or stearate- modified arginine-rich peptide**Takumi Kurano<sup>1,2</sup>, Takanori Kanazawa<sup>1,2</sup>, Mami Kaneko<sup>2</sup>, Hisako Ibaraki<sup>2</sup>, Yuuki Takashima<sup>2</sup>, Toyofumi Suzuki<sup>1</sup>*Nihon University, Funabashi, Chiba, Japan*, <sup>2</sup>*Tokyo University of Pharmacy and Life Sciences, Hachioji, Tokyo, Japan***P-19 Novel Targeted Nanoparticles for the Prevention of Diet-induced Obesity via Adipose Tissue Transformation**Ryu Hiradate<sup>1</sup>, Ikramy A. Khalil<sup>1,2</sup>, Hideyoshi Harashima<sup>1</sup><sup>1</sup>*Hokkaido University, Sapporo, Japan*, <sup>2</sup>*Assiut University, Assiut, Egypt***P-20 Control of the Lymphatic Transport of Nanoparticles -Impact of Nanoparticle Size and Surface Charge-**Masaki Gomi<sup>1</sup>, Yu Sakurai<sup>1</sup>, Hiroki Tanaka<sup>1</sup>, Naoya Miura<sup>1</sup>, Shinsuke Akita<sup>2</sup>, Yoshihisa Yamaji<sup>2</sup>, Nobuyuki Mitsukawa<sup>2</sup>, Hidetaka Akita<sup>1</sup><sup>1</sup>*Graduate School of Pharmaceutical Sciences, Chiba University, Chiba, Japan*, <sup>2</sup>*Graduate School of Medicine, Chiba University, Chiba, Japan***P-21 Effects of surface charge and PEG modification of liposome on its quantitative distribution in the brain and spinal cord by nose-to-brain delivery**

Takanori Kanazawa, Nao Maruhana, Mayu Yamada, Takashi Udagawa, Naoto Suzuki

*Childrens Cancer Institute, Funabashi, Chiba, Japan***P-22 Macrophages contribute to anti-PEG IgM production and the subsequent accelerated blood clearance of PEGylated liposomes**

Marwa Mohammed, Taro Shimizu, Tatsuhiko Ishida

*Tokushima University, Tokushima, Japan***P-23 Immunization method to obtain antigen-specific antibodies by antigen delivery to splenic marginal zone B cells using PEGylated liposomes**

Yuna Shimazaki, Hidenori Ando, Taro Shimizu, Yu Ishima, Tatsuhiko Ishida

*Tokushima University, Tokushima, Japan***P-24 Effect of dose and temperature on morphology of doxorubicin-loaded liposome evaluated by cryo-TEM and AFM**

Koki Nishimura, Naoki Takahashi, Keisuke Ueda, Kenjiro Higashi, Kunikazu Moribe

*Chiba University, Chiba, Japan*

**P-25 Opening of Tumor Neovasculature and Enhancement of ERP Effect by Lipid Bubbles and Ultrasound**

Kageyama Saori, Unga Johan, Omata Daiki, Maruyama Kazuo, Suzuki Ryo  
*Teikyo University, Tokyo, Japan*

**P-26 Liposomal-based Nanocarrier for Mitochondrial Delivery of Photosensitizer**

Satrialdi<sup>1,2</sup>, Yuma Yamada<sup>1</sup>, Reina Munechika<sup>1</sup>, Vasudevanpillai Biju<sup>3</sup>, Yuta Takano<sup>3</sup>, Hideyoshi Harashima<sup>1</sup>

<sup>1</sup>Faculty of Pharmaceutical Sciences, Hokkaido University, Sapporo, Japan, <sup>2</sup>School of Pharmacy, Institut Teknologi Bandung, Bandung, Indonesia, <sup>3</sup>Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan

**P-27 Characterization of pH-Dependent Membrane Lytic Activities of Designed Peptides**

Ayumi Kashiwada, Masaki Mizuno, Bubphasawan Suriyaporn  
*Nihon University, Narashino, Chiba, Japan*

**P-28 Development of tumor penetrable liposome as a novel systemic siRNA carrier for cancer treatment**

Hisako Ibaraki<sup>1</sup>, Takanori Kanazawa<sup>1,2</sup>, Momoyo Funami<sup>1</sup>, Sumire Takiguchi<sup>1</sup>, Yuuki Takashima<sup>1</sup>, Yasuo Seta<sup>1</sup>

<sup>1</sup>Tokyo University of Pharmacy and Life Sciences, Tokyo, Japan, <sup>2</sup>School of Pharmacy, Nihon University, Chiba, Japan

**P-29 Enhanced therapeutic efficacy of liposomal weak-base anticancer drugs by daily oral administration of sodium bicarbonate**

Maho Tagami<sup>1</sup>, Hidenori Ando<sup>1</sup>, Ai Ikeda<sup>1</sup>, Kiyoshi Eshima<sup>2</sup>, Cheng-Long Huang<sup>3</sup>, Hiromi Wada<sup>3</sup>, Tatsuhiro Ishida<sup>1</sup>

<sup>1</sup>Tokushima University, Tokushima, Japan, <sup>2</sup>Delta-Fly Pharma, Inc., Tokushima, Japan, <sup>3</sup>Kyoto University, Kyoto, Japan

**P-30 Lipophilic Prodrug of Methotrexate in the Membrane of Liposomes Enhances Their Capture by Human Blood Phagocytes**

Daria Tretiakova, Sergei Khaidukov, Natalia Onishchenko, Elena Vodovozova

*Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russian Federation*

**P-31 Treatment of cerebral ischemia reperfusion injuries in mice by nose-to-brain delivery of anti-RelA siRNA with membrane-permeable polymer micelles**

Mitsuyoshi Fukuda<sup>1</sup>, Takanori Kanazawa<sup>1,2</sup>, Shingo Iioka<sup>1</sup>, Yuta Hidaka<sup>1</sup>, Keigo Uezu<sup>1</sup>, Hisako Ibaraki<sup>2</sup>, Yuuki Takashima<sup>2</sup>, Naoto Suzuki<sup>1</sup>, Toyofumi Suzuki<sup>1</sup>

<sup>1</sup>Nihon University, Funabashi, Japan, <sup>2</sup>Tokyo University of Pharmaceutics and Life Sciences, Hachioji, Japan

**P-32 Enhancement of Tumor Penetration and Therapeutic Efficacy of Liposomal formulations**

Leila Arabi, Mahmoud Reza Jaafari

*Pharmaceutical Nanotechnology department- School of pharmacy, Mashhad, Iran*

**P-33 Long-term storage of PEGylated liposomal oxaliplatin with improved stability and long circulation times *in vivo***

Yusuke Doi<sup>1</sup>, Taro Shimizu<sup>2</sup>, Yu Ishima<sup>2</sup>, Tatsuhiro Ishida<sup>2</sup>

<sup>1</sup>Taiho Pharmaceutical Co., Ltd., Tokushima, Japan, <sup>2</sup>Tokushima University, Tokushima, Japan

P-34

**Targeting of tumor vasculature and tumor cells by dual ligand modified liposomal doxorubicin**Mohamadreza Amin<sup>1</sup>, Mahmoud Reza Jaafari<sup>2</sup>, Timo L.M ten Hagen<sup>1</sup><sup>1</sup>Erasmus Medical Center, Rotterdam, The Netherlands, <sup>2</sup>Mashhad University of Medical Sciences, Mashhad, Iran

P-35

**Synthetic Minimal Cells: A Novel Paradigm In Drug Delivery**David Benjamin<sup>1</sup>, Felix Moser<sup>1</sup>, Kate Adamala<sup>1,2</sup>, Ed Boyden<sup>1,3</sup><sup>1</sup>Synlife Inc., Cambridge, USA, <sup>2</sup>University of Minnesota (UMN), Minneapolis, USA, <sup>3</sup>Massachusetts Institute of Technology (MIT), Cambridge, USA

P-36

**Innovation that Enables the Encapsulation of Sparingly Soluble Drugs for Delivery in Liposomes**Charles O. Noble<sup>1</sup>, Mark E. Hayes<sup>1</sup>, Francis C. Szoka<sup>2</sup><sup>1</sup>ZoneOne Pharma, Vallejo CA, United States, <sup>2</sup>94592,2Bioengineering and Therapeutic Sciences, University of California, San Francisco, CA, United States

P-37

**Creation of photoinduced DNA encapsulation liposome using ultrafast DNA photo-cross-linking**

Shigetaka Nakamura, Nobuharu Uehara, Takashi Hasegawa, Kenzo Fujimoto

Japan Advanced Institute of Science and Technology, Nomi, Japan

P-38

**Tweaking of lipid nanoparticles chemical composition enables selective tissue targeting**Mahmoud ABD ELWAKIL<sup>1</sup>, Ikramy KHALIL<sup>1,2</sup>, Hideyoshi HARASHIMA<sup>1</sup><sup>1</sup>Hokkaido University, Sapporo, Japan, <sup>2</sup>Assiut University, Assiut, Egypt

P-39

**Novel lipid nanoparticles with metabolizable cationic lipids for nucleic acid delivery**

Yukinobu Numata, Yoshiyuki Onishi, Takako Niwa, Masakazu Tamura, Yuji Kasuya, Takayoshi Nishiya, Daisuke Sugiyama, Taishi Yoshida, Makoto Koizumi

Daiichi Sankyo Co., Ltd., Tokyo, Japan

P-40

**Development of novel Charge-Reversible lipids for nucleic acid delivery**Koji Tomita<sup>1</sup>, Naofumi Fukata<sup>1</sup>, Noriyuki Maeda<sup>1</sup>, Ryoko Saeki<sup>2</sup>, Naoto Oku<sup>3</sup>, Tomohiro Asai<sup>2</sup><sup>1</sup>Nippon Fine Chemical Co., Ltd, Takasago, Japan, <sup>2</sup>University of Shizuoka, Shizuoka, Japan, <sup>3</sup>Teikyo University, Itabashi, Japan

P-41

**A Multifunctional Co-delivery Liposome for Targeted Chemotherapy and Gene Therapy for Hepatocellular Carcinoma**Mahmoud A. Younis<sup>1,2</sup>, Ikramy A. Khalil<sup>1,2</sup>, Mahmoud M. Abd Elwakil<sup>1</sup>, Hideyoshi Harashima<sup>1</sup><sup>1</sup>Laboratory of Innovative Nanomedicine, Faculty of Pharmaceutical Sciences, Hokkaido University, Sapporo, Japan, <sup>2</sup>Faculty of Pharmacy, Assiut University, Assiut, Egypt

P-42

**Targeting and reprogramming tumor-associated macrophages using optimized siRNA-loaded lipid nanoparticles**

Nour Shobaki, Yusuke Sato, Hideyoshi Harashima

Hokkaido University, Sapporo, Japan

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**Novel Spleen Selective Lipid Nanoparticles as Plasmid DNA Cancer Vaccine**Seigo Kimura<sup>1</sup>, Ikramy Khalil<sup>1,2</sup>, Hideyoshi Harashima<sup>1</sup><sup>1</sup>Hokkaido University, Sapporo, Japan, <sup>2</sup>Assiut University, Assiut, Egypt

**P-44 GALA-modified Plasmid DNA Encapsulated Nanoparticles for Lung Targeting**Yuta Hagino<sup>1</sup>, Ikramy A Khalil<sup>1,2</sup>, Hideyoshi Harashima<sup>1</sup><sup>1</sup>Hokkaido University, Sapporo, Japan, <sup>2</sup>Assuit University, Assuit, Egypt**P-45 Gene therapy with lipoplexes may worsen inflammation via formation of immune complexes with pre-existing anti-DNA antibodies in SLE-prone mice**

Haruka Takata, Taro Shimizu, Tatsuhiko Ishida

Tokushima University, Tokushima, Japan

**P-46 Therapeutic effect of lung-metastasis by using vascular-targeting siRNA lipid nanoparticles**Yu Sakurai<sup>1,2</sup>, Tomoya Hada<sup>1</sup>, Akari Kato<sup>1</sup>, Yuta Hagino<sup>1</sup>, Wataru Mizumura<sup>1</sup>, Hideyoshi Harashima<sup>1</sup><sup>1</sup>Hokkaido University, Sapporo, Japan, <sup>2</sup>Chiba University, Chiba, Japan**P-47 Validation of mitochondrial RNA therapy for mitochondrial diseases using Liposome-based nano device**Kana Somiya<sup>1</sup>, Yuma Yamada<sup>1</sup>, Akihiko Miyauchi<sup>2</sup>, Hitoshi Osaka<sup>2</sup>, Hideyoshi Harashima<sup>1</sup><sup>1</sup>Hokkaido University, Sapporo, Japan, <sup>2</sup>Jichi Medical University, Shimotsuke, Japan**P-48 Development of ribosomal RNA-loaded nano device for mitochondrial delivery to achieve mitochondrial deafness related gene therapy**Minako Maruyama<sup>1</sup>, Yuma Yamada<sup>1</sup>, Tomoko Kita<sup>2</sup>, Shin-ichiro Kitajiri<sup>3</sup>, Shin-ichi Usami<sup>3</sup>, Hideyoshi Harashima<sup>1</sup><sup>1</sup>Hokkaido University, Sapporo, Japan, <sup>2</sup>Kyoto University, Kyoto, Japan, <sup>3</sup>Shinshu University, Matsumoto, Japan**P-49 Development of siRNA delivery system to lymphatic endothelial cells using ssPalm lipid nanoparticles**Nodoka Abe<sup>1</sup>, Yu Sakurai<sup>1</sup>, Satoshi Ogasawara<sup>2</sup>, Takeshi Murata<sup>2</sup>, Kota Tange<sup>3</sup>, Yuta Nakai<sup>3</sup>, Hiroki Yoshioka<sup>3</sup>, Shinya Tamagawa<sup>3</sup>, Hiroki Tanaka<sup>1</sup>, Hidetaka Akita<sup>1</sup><sup>1</sup>Graduate School of Pharmaceutical Sciences, Chiba University, Chiba, Japan, <sup>2</sup>Division of Chemistry, Graduate School of Science, Chiba University, Chiba, Japan, <sup>3</sup>DDS Research Laboratory, NOF CORPORATION, Tokyo, Japan**P-50 Analysis of intracellular dynamics for improving the bioavailability of siRNA**

Kosuke Sasaki, Yusuke Sato, Kazuki Hashiba, Hideyoshi Harashima

Hokkaido University, Sapporo, Japan

**P-51 RNA Delivery System Using Ultrasound-Responsive Nanobubble for Duchenne Muscular Dystrophy**Kei Nirasawa<sup>1</sup>, Yusuke Mitsunashi<sup>1</sup>, Yoko Endo-Takahashi<sup>1</sup>, Nobuhito Hamano<sup>1</sup>, Tetsushi Sakuma<sup>2</sup>, Ryo Suzuki<sup>3</sup>, Kazuo Maruyama<sup>3</sup>, Takashi Yamamoto<sup>2</sup>, Yoichi Negishi<sup>1</sup><sup>1</sup>Tokyo University of Pharmacy and Life Sciences, Tokyo, Japan, <sup>2</sup>Hiroshima University, Hiroshima, Japan, <sup>3</sup>Teikyo University, Tokyo, Japan**P-52 Development of Ribonucleoprotein-loaded lipid nanoparticles for genome editing**Yuichi Suzuki<sup>1</sup>, Yusuke Sato<sup>1</sup>, Risa Sato<sup>1</sup>, Masatoshi Maeki<sup>2</sup>, Manabu Tokeshi<sup>2</sup>, Hideyoshi Harashima<sup>1</sup><sup>1</sup>Faculty of pharmaceutical, Hokkaido University, Sapporo, Japan, <sup>2</sup>Faulty of Engineering, Hokkaido University, Sapporo, Japan



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**Ternary Complexes of pDNA, Neuron-Binding Peptide, and PEGylated Polyethylenimine for Brain Delivery with Nanobubbles and Ultrasound**Yoko Endo-Takahashi<sup>1</sup>, Ryo Kurokawa<sup>1</sup>, Kanako Sato<sup>1</sup>, Fumihiko Katagiri<sup>1</sup>, Ryo Suzuki<sup>2</sup>, Kazuo Maruyama<sup>2</sup>, Motoyoshi Nomizu<sup>1</sup>, Yoichi Negishi<sup>1</sup><sup>1</sup>Tokyo University of Pharmacy and Life Sciences, Hachioji, Japan, <sup>2</sup>Teikyo University, Itabashi, Japan

P-54

**Saturated Phospholipids Are Required for Nano- to Micron-sized Transformation of Cholesterol-containing Unilamellar Liposomes upon QS21 addition**Pushpendra Singh<sup>1,2</sup>, Zoltan Beck<sup>1,2</sup>, Gary Matyas<sup>2</sup>, Carl Alving<sup>2</sup><sup>1</sup>Henry M. Jackson Foundation, Bethesda, United States, <sup>2</sup>Walter Reed Army Institute of Research, Silver Spring, United States

P-55

**Protein Delivery to the G.I Tract: Utilising microfluidics as a scale-independent production platform for protein loaded nanoparticles**Neil Forbes<sup>1</sup>, Nicolas Szita<sup>2</sup>, Donna Bryan<sup>3</sup>, Fatme Mawas<sup>3</sup>, Yvonne Perrie<sup>1</sup><sup>1</sup>Strathclyde Institute of Pharmacy and Biomedical Science, Glasgow, United Kingdom, <sup>2</sup>University College London, London, United Kingdom, <sup>3</sup>National Institute for Biological Standards and Control, Ridge, United Kingdom

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**Development of RNA vaccine platform based on an intracellular environment-responsive lipid-like material with Vitamin E-scaffold**Ryotaro Oyama<sup>1</sup>, Naho Tateshita<sup>1</sup>, Jessica Anindita<sup>1</sup>, Hiroki Tanaka<sup>1</sup>, Naoya Miura<sup>1</sup>, Yu Sakurai<sup>1</sup>, Kota Tange<sup>2</sup>, Yuta Nakai<sup>2</sup>, Hiroki Yoshioka<sup>2</sup>, Hidetaka Akita<sup>1</sup><sup>1</sup>Chiba University, Chiba, Japan, <sup>2</sup>NOF CORPORATION, Kawasaki, Japan

P-57

**A CTL-inducing vaccine adjuvant based on encapsulation of DDA-poly(I:C) in a phospholipid bilayer by using microfluidics**Schmidt Signe<sup>1,2</sup>, Christensen Dennis<sup>2</sup>, Perrie Yvonne<sup>1</sup><sup>1</sup>University of Strathclyde, Glasgow, United Kingdom, <sup>2</sup>Statens Serum Institut, Copenhagen, Denmark

P-58

**Synthesis and immunological properties of protein conjugate adsorbed on cationic liposomes surface**Chatzikleantous Despo<sup>1</sup>, Paciello Ida<sup>2</sup>, Carboni Filippo<sup>2</sup>, D'Oro Ugo<sup>2</sup>, Romano Maria Rosaria<sup>2</sup>, Roberts Craig<sup>1</sup>, Perrie Yvonne<sup>1</sup>, Adamo Roberto<sup>2</sup><sup>1</sup>University of Strathclyde, Glasgow, UK, <sup>2</sup>GSK, Siena, Italy

P-59

**Covalent conjugation of non-functionalized, tag-free native-like HIV-1 envelope trimers onto the surface of peptide-loaded liposomes**Ehsan Suleiman<sup>1,2</sup>, Elisabeth Lehner<sup>2</sup>, Julia Mayer<sup>2</sup>, Dominik Damm<sup>3</sup>, Bianca Kohlhauser<sup>2,4</sup>, Mirjam Batzoni<sup>2,5</sup>, Vladimir Temchura<sup>3</sup>, Andreas Wagner<sup>1</sup>, Klaus Ueberla<sup>3</sup>, Karola Vorauer-Uhl<sup>2</sup><sup>1</sup>Polymun Scientific Immunbiologische Forschung GmbH, Klosterneuburg, Austria, <sup>2</sup>University of Natural Resources and Life Sciences, Department of Biotechnology, Vienna, Austria, <sup>3</sup>University Hospital Erlangen, Institute of Clinical and Molecular Virology, Erlangen, Germany, <sup>4</sup>University of Vienna, Vienna, Austria, <sup>5</sup>University of Applied Sciences Campus Vienna, Vienna, Austria

P-60

**Improvement of PD-1 antibody resistance of melanoma lung metastasis by STING agonist loaded lipid nanoparticles**Takanori Sato<sup>1</sup>, Takashi Nakamura<sup>1</sup>, Naomichi Takahashi<sup>1</sup>, Yusuke Sato<sup>1</sup>, Mamoru Hyodo<sup>2</sup>, Yoshihiro Hayakawa<sup>2</sup>, Hideyoshi Harashima<sup>1</sup><sup>1</sup>Faculty of Pharmaceutical Sciences, Hokkaido University, Sapporo, Japan, <sup>2</sup>Department of Applied Chemistry, Faculty of Engineering, Aichi Institute of Technology, Toyota, Japan

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**P-61 TLR3 adjuvant-loaded liposome induce robust antitumor activity and reduces systemic inflammation following intravenous administration**

Sion E E Haloho, Takashi Nakamura, Hideyoshi Harashima

*Faculty of Pharmaceutical Sciences, Hokkaido University, Sapporo, Japan***P-62 Novel liposomal vaccination platform for the co-delivery of cancer neo-epitopes and TLR7-agonist**

Gael Clergeaud, Ditte Jaehger, Mie L. Hubbe, Martin K. Kraemer, Anna L. Colliander, Martin Bak, Thomas L. Andresen

*Denmark Technical University (DTU), Kgs. Lyngby, Denmark***P-63 Immunogenicity and Safety of the Army Liposome Formulations containing QS-21 (ALFQ) in Non-human Primates**Zoltan Beck<sup>1,2</sup>, Gary R. Matyas<sup>2</sup>, David E. Lanar<sup>2</sup>, Amritha Ramakrishnan<sup>3</sup>, Frederic Poly<sup>4</sup>, Renee M. Laird<sup>4</sup>, Sheetij Dutta<sup>2</sup>, Evelina Angov<sup>2</sup><sup>1</sup>Henry M. Jackson Foundation for the Advancement of Military Medicine, Bethesda, USA, <sup>2</sup>Walter Reed Army Institute of Research, Silver Spring, USA, <sup>3</sup>Naval Medical Research Unit Six, Lima, Peru, <sup>4</sup>Naval Medical Research Center, Silver Spring, USA**P-64 Stabilization of lipid vesicles by gold nanoparticles**

Nishu Kanwa, Soumya Kanti De, Ananya Patnaik

*Indian Institute of Technology Indore, India, Indore, India***P-65 Delivery of siRNA with charge-reversible LNP prepared by a method optimized using design of experiment**Ryoko Saeki<sup>1</sup>, Yusuke Hirai<sup>1</sup>, Hiroyasu Toyota<sup>1</sup>, Hiroyuki Koide<sup>1</sup>, Naoto Oku<sup>2</sup>, Naofumi Fukata<sup>3</sup>, Koji Tomita<sup>3</sup>, Noriyuki Maeda<sup>3</sup>, Tomohiro Asai<sup>1</sup><sup>1</sup>Univ. of Shizuoka Sch. of Pharm. Sci., Shizuoka, Japan, <sup>2</sup>Teikyo Univ. Sch. of Pharm. Sci., Tokyo, Japan, <sup>3</sup>Nippon Fine Chemical, Osaka, Japan**P-66 Development of Oil-like Material as a Novel Vehicle for Intravenous and Oral Drug Delivery**Saed Abbasi<sup>1</sup>, Yusuke Sato<sup>2</sup>, Haruki Higashino<sup>3</sup>, Keiko Minami<sup>3</sup>, Makoto Kataoka<sup>3</sup>, Kazuaki Kajimoto<sup>4</sup>, Shinji Yamashita<sup>3</sup>, Hideyoshi Harashima<sup>2</sup><sup>1</sup>Innovation Center of NanoMedicine (iCONM), Kawasaki, Japan, <sup>2</sup>Hokkaido University, Sapporo, Japan, <sup>3</sup>Setsunan University, Osaka, Japan, <sup>4</sup>National Institute of Advanced Industrial Science and Technology (AIST), Takamatsu, Japan**P-67 Scalable manufacturing of liposomes to improve therapeutic efficacy by encapsulation of drugs using high pressure microfluidizer**Khadke Swapnil<sup>1,2</sup>, Mains Jenifer<sup>2</sup>, Tian Wei<sup>2</sup>, Perrie Yvonne<sup>1</sup><sup>1</sup>Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Glasgow, United Kingdom, <sup>2</sup>Lonza Pharma & Biotech, (MWE Encap), Edinburgh, United Kingdom**P-68 Comparing filtration techniques for scalable manufacturing of liposomal formulations**

Cameron Webb, Yvonne Perrie

*Strathclyde Institute of Pharmacy and Biomedical Sciences, Glasgow, Scotland*

P-69

**PLA2-Responsive Liposomes Bearing Allocolchicinoid-Phospholipid Conjugates in the Bilayer**

Natalia Onishchenko<sup>1</sup>, Ekaterina Shchegravina<sup>2</sup>, Daria Tretiakova<sup>1</sup>, Anna Alekseeva<sup>1</sup>, Timur Galimzyanov<sup>3,4</sup>, Yuri Ermakov<sup>3</sup>, Elena Svirshchetskaya<sup>1</sup>, Elena Vodovozova<sup>1</sup>, Alexey Fedorov<sup>2</sup>, Ivan Boldyrev<sup>1</sup>

<sup>1</sup>Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Moscow, Russia, <sup>2</sup>Lobachevsky State University of Nizhny Novgorod, Nizhny Novgorod, Russia, <sup>3</sup>Frumkin Institute of Physical Chemistry and Electrochemistry, Moscow, Russia, <sup>4</sup>National University of Science and Technology MISiS, Moscow, Russia

P-70

**Development of a liposomal formulation of curcumin by microfluidics for in vivo delivery**

Nobuhito Hamano<sup>1,2</sup>, Suen Ern Lee<sup>2</sup>, Yang Yang<sup>2</sup>, Jayesh A. Kulkarni<sup>2</sup>, Shell Ip<sup>3</sup>, Pieter R. Cullis<sup>2</sup>, Shyh-Dar Li<sup>2</sup>

<sup>1</sup>Tokyo University of Pharmacy and Life Sciences, Hachioji, Japan, <sup>2</sup>University of British Columbia, Vancouver, Canada, <sup>3</sup>Precision NanoSystems Inc., Vancouver, Canada

P-71

**Designing the junction type of microfluidic devices for assembling ultrasmall lipid-polymer hybrid nanoparticles**

Ryosuke Suzuki<sup>1</sup>, Chihong Song<sup>2</sup>, Kazuyoshi Murata<sup>2</sup>, Shoji Fukushima<sup>1</sup>

<sup>1</sup>Kobe Gakuin University, Kobe, Japan, <sup>2</sup>National Institute for Physiological Sciences, Okazaki, Japan

P-72

**Formulation screening of lipid nanoparticles for gene delivery using microfluidics as a high-throughput production method**

Carla Belen Roces Rodriguez, Gavin Halbert, Yvonne Perrie

Strathclyde Institute of Pharmacy and Biomedical Science, Glasgow, United Kingdom

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## September 17

## Keynote Lecture

09:00 - 09:45

**KL-2 Self-assembled Supramolecular Nanosystems for Treating Cancer and Brain Disorders**Kazunori Kataoka<sup>1,2</sup><sup>1</sup>*Innovation Center of NanoMedicine (iCONM), Kawasaki Institute of Industrial Promotion, Kawasaki, JAPAN*, <sup>2</sup>*Institute for Future Initiatives, the University of Tokyo, Tokyo, JAPAN*

## ..... Coffee Break .....

9:45 - 10:00

## Oral Presentation

10:00 - 10:15

**O-08 Scalable Manufacture of mRNA Lipid Nanoparticles Using a Novel Microfluidic Mixing Architecture**Hui Yee Chua, Lloyd Jeffs, Jagbir Singh, Gemma Ryan, Ariel Zhang, James Ko, Andre Wild, Aleksei Angell, Robert Young, Kevin Ou*Precision NanoSystems Inc, Vancouver, Canada*

10:15 - 10:30

**O-09 Improving the Expression Efficiency of Plasmid DNA Using Double-coated Lipid Nanoparticles**Ikramy A. Khalil<sup>1,2</sup>, Seigo Kimura<sup>1</sup>, Yuta Hagino<sup>1</sup>, Hideyoshi Harashima<sup>1</sup><sup>1</sup>*Hokkaido University, Sapporo, Japan*, <sup>2</sup>*Assiut University, Assiut, Egypt*

10:30 - 10:45

**O-10 Remote Loading of Doxorubicin into Liposomes and Red Blood Cell Ghosts: Use of Entrapped Water-Soluble Polymers as the Core Attractants.**Akshaya Meher, Arshad Ali Khan, Galina B Diakova, Alexander L. Klibanov*University of Virginia, Charlottesville, USA*

10:45 - 11:00

**O-11 CTGF Knockdown Sensitizes Hyperthermia Therapy by NIR and CuS Nanoparticles in Orthotopic Models of Ovarian Cancers**Hiroto Hatakeyama*Chiba University, Chiba, Japan*

11:00 - 11:15

**O-12 Fusion-dependent formation of lipid nanoparticles containing macromolecular payloads**Jerry Leung<sup>1</sup>, Jayesh A. Kulkarni<sup>1</sup>, Dominik Witzigmann<sup>1</sup>, Roy van der Meel<sup>1,2,3</sup>, Josh Zaifman<sup>1,4</sup>, Maria M. Darjuan<sup>1,4</sup>, Hiu Man Grisch-Chan<sup>5</sup>, Beat Thony<sup>5</sup>, Yuen Yi C. Tam<sup>1,4</sup>, Pieter R. Cullis<sup>1</sup><sup>1</sup>*University of British Columbia, Vancouver, Canada*, <sup>2</sup>*University Medical Center Utrecht, Utrecht, The Netherlands*, <sup>3</sup>*Eindhoven University of Technology, Eindhoven, The Netherlands*, <sup>4</sup>*Integrated Nanotherapeutics, Vancouver, Canada*, <sup>5</sup>*University Children's Hospital Zurich and Children's Research Centre, Zurich, Switzerland*

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**O-13 Control of gene expression by siRNA-loaded nanoparticles in human immune cells**Takashi Nakamura, Koharu Yamada, Yuki Fujiwara, Moeka Kuroi, Yusuke Sato, Hideyoshi Harashima*Faculty of Pharmaceutical Sciences, Hokkaido University, Sapporo, Japan*

11:30 - 11:45

**O-14 High-throughput Microfluidics: A fast and efficient manufacturing tactic to maximise drug loading into liposomes**Khadke Swapnil<sup>1,2</sup>, Mains Jenifer<sup>2</sup>, Tian Wei<sup>2</sup>, Perrie Yvonne<sup>1</sup><sup>1</sup>Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Glasgow, United Kingdom, <sup>2</sup>Lonza Pharma & Biotech, (MWE Encap), Edinburgh, United Kingdom

11:45 - 12:00

**O-15 Latest Technology for Laboratory Nanostructure Analysis of Liposome for Drug delivery system**Yuichi Takasaki, Yuki Nakano, Keisuke Miyamoto*Anton Paar Japan, Tokyo, Japan*..... **Lunch Break** .....**12:00 - 13:15****Invited Lecture**

13:15 - 13:40

**IL-7 Liposomal Drug Targeting: What Now? Now What?**Gert Storm<sup>1,2</sup><sup>1</sup>Dept. Pharmaceutics, Utrecht Institute for Pharmaceutical Sciences (UIPS), Utrecht University, PO Box 80082, 3508 TB Utrecht, The Netherlands, <sup>2</sup>Dept. Biomaterials Science & Technology (BST), MIRA Institute for Biomedical Technology and Technical Medicine, University of Twente, Enschede, The Netherlands

13:40 - 14:05

**IL-8 Imaging tumor associated macrophages to guide nanotherapy action in solid cancers**Miles Miller<sup>1,2</sup><sup>1</sup>Center for Systems Biology, Massachusetts General Hospital, <sup>2</sup>Department of Radiology, Harvard Medical School, Boston, MA, USA

14:05 - 14:30

**IL-9 Cancer Stromal Targeting Therapy Based on the Tumor Microenvironment**Yasuhiro Matsumura*Division of Developmental Therapeutics, Exploratory Oncology Research & Clinical Trial Center, National Cancer center, Japan*..... **Coffee Break** .....**14:30 - 14:40**

**14:40 - 15:05****IL-10 Critical Design Parameters for Lipid Nanoparticle-mRNA Therapeutics**Peter Lutwyche*Genevant Sciences Corp., Burnaby, British Columbia, Canada***15:05 - 15:30****IL-11 Opportunities and Challenges in Commercial Pharmaceutical Liposome Applications**Gerald Jensen*Gilead Sciences, Inc., United States***15:30 - 15:55****IL-12 Product and process optimization to improve liposomes/LNP characteristics.**Andreas Wagner*Polymun Scientific GmbH, Donaustrasse 99, 3400 Klosterneuburg, Austria*..... **Coffee Break** .....**15:55 - 16:05****16:05 - 16:30****IL-13 Bubble-Ultrasound mediated Drug Delivery System for Nanomedicine**Kazuo Maruyama*Laboratory for Ultrasound Theranostics, Faculty of Pharma-Sciences Teikyo University, JAPAN***16:30 - 16:55****IL-14 Promitil® - a lipidic prodrug of mitomycin c in liposomes: From bench to bedside**Alberto Gabizon*Nano-oncology Center, Shaare Zedek Hospital and Hebrew University-School of Medicine POB 3235, Jerusalem 91031, ISRAEL***16:55 - 17:20****IL-15 Modernization of pharmaceutical regulation for Facilitating Early Patient Access:****Revision of the Pharmaceuticals and Medical Devices Act**Kazuhiko Mori*Ministry of Health, Labour and Welfare, Japan*..... **Coffee Break** .....**17:20 - 17:30****Award Ceremony & Lecture****17:30 - 18:30****The Alec D. Bangham, MD, FRS Achievement Award**Naoto Oku*Faculty of Pharma-Science, Teikyo University*

September 18

**Keynote Lecture**

09:00 - 09:45

**KL-3 Design of Lipid Nanoparticle Delivery Systems That Enable Gene Therapies**

Pieter R. Cullis

*Department of Biochemistry and Molecular Biology, University of British Columbia, Vancouver, Canada*

..... **Coffee Break** .....

09:45 - 10:00

**PRC Workshop**

10:00 - 12:00

**Introduction**

**Introduction of the Phospholipid Research Center**

Peter van Hoogevest

*Phospholipid Research Center Heidelberg, GERMANY*

10:00 - 12:00

**W-1 Phosphatidylserine (PS) and Phosphatidylglycerol (PG) enriched phospholipid dispersions: From impurities to bioactives?**

Karsten Mäder

*Institute of Pharmacy, Martin Luther University Halle-Wittenberg, GERMANY*

10:00 - 12:00

**W-2 Re-programming tumor-associated macrophages using targeted liposomes**

Jai Prakash

*Targeted Therapeutics, Department of Biomaterials Science and Technology, University of Twente, The Netherlands*

10:00 - 12:00

**W-3 Reconstitution of Asymmetric Liposomes Mimicking the Outer Membrane of Gram-negative Bacteria**

Christian Nehls<sup>1</sup>, Laura Paulowski<sup>1</sup>, Kareem Al Nahas<sup>2</sup>, Mathias Winterhalter<sup>3</sup>, Ulrich Keyser<sup>2</sup>, Thomas Gutsmann<sup>1</sup>

*<sup>1</sup>Research Center Borstel, Division of Biophysics, Borstel, Germany, <sup>2</sup>University of Cambridge, Cavendish Laboratory, Cambridge, United Kingdom, <sup>3</sup>Jacobs University, Biophysics, Dept. of Life Science & Chemistry, Bremen, Germany*

..... **Lunch Break** .....

12:00 - 13:30

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**Invited Lecture****13:30 - 13:55****IL-16 Weak Current-mediated delivery of liposomes**Kentaro Kogure*Department of Pharmaceutical Health Chemistry, Graduate School of Biomedical Sciences Tokushima University, JAPAN***13:55 - 14:20****IL-17 The utility of the pig model in the understanding, prediction and prevention of liposome-induced infusion reactions**János Szébeni*Semmelweis University, Hungary***14:20 - 14:45****IL-18 A novel antigen delivery system: Antigen-selective delivery to splenic marginal zone B cells via repeated injections of PEGylated liposomes**Tatsuhiko Ishida*The University of Tokushima, Japan*..... **Coffee Break** .....**14:45 - 15:00****15:00 - 15:25****IL-19 Potential of a Charge-reversible Lipid Derivative for Nanoparticle-mediated siRNA Delivery**Tomohiro Asai*University of Shizuoka School of Pharmaceutical Sciences, JAPAN***15:25 - 15:50****IL-20 TRAFsomes capable of modulating and potentiating multi-faceted immuno-reactivity towards target cancer cells**Yuhong Xu*Zhejiang University, China***15:50 - 16:15****IL-21 MITO-Porter, a liposomal mitochondrial delivery system: Toward Mitochondrial Nanomedicine**Yuma Yamada, Hideyoshi Harashima*Faculty of Pharmaceutical Sciences, Hokkaido University, JAPAN***Closing Remarks****16:15 - 16:25**

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