

## PROGRAM

MONDAY, October 28—7:00 PM

### Welcome Remarks

#### Minoru Yoshida

RIKEN CSRS and University of Tokyo, Japan

#### Maoyen Chi

Cold Spring Harbor-Asia

### KEYNOTE SPEAKER

**Introduction by:** Haian Fu, Emory University School of Medicine, Atlanta, Georgia, USA

#### **Chemical tricks for drugging the undruggable in oncology**

Kevan Shokat [35'+10']

Presenter affiliation: University of California, San Francisco, San Francisco, California.

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MONDAY, October 28—7:45 PM

### SESSION 1 CHEMICAL PROBE I

**Chairperson:** Haian Fu, Emory University School of Medicine, Atlanta, Georgia, USA

#### **Sugars and proteins**

Ben Davis [20'+10']

Presenter affiliation: University of Oxford, Oxford, United Kingdom.

#### **Self-assembling bioactive small molecules**

Motonari Uesugi [20'+10']

Presenter affiliation: Kyoto University, Kyoto, Japan.

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**SESSION 2**      CHEMICAL PROBE II

**Chairperson:**    **Motonari Uesugi**, Kyoto University, Kyoto, Japan

**High-throughput enantiopurity measurement for biocatalyst evolution using DNA-based sensors**

Jennifer M. Heemstra [20'+10']

Presenter affiliation: Emory University, Atlanta, Georgia.

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**Chemical labeling of endogenous proteins in live cell conditions**

Itaru Hamachi [20'+10']

Presenter affiliation: Kyoto University, Kyoto, Japan.

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**Study phosphotyrosine signaling in living mammalian cells by genetic encoding of irreversible enzyme inhibitors**

Tao Liu [10'+5']

Presenter affiliation: Peking University, Beijing, China.

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**Discovery of kinase inhibitors with novel inhibitory mechanisms**

Shaoqing Zhou, Kun Shi, Yan Cheng, Zhiyuan Ai, Chao Peng, Lifeng Pan, Guanglei Zhuang, Guohui Li, Li Tan [10'+5']

Presenter affiliation: Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai, China.

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***Coffee / Tea Break***

**Bioorthogonal protein activation in space and time**

Peng Chen [20'+10']

Presenter affiliation: Peking University, Beijing, China.

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**A photoswitchable inhibitor for the mitotic motor protein**

Kazuya Matsuo, Noushaba N. Mafy, Shota Hiruma, Ryota Uehara, Nobuyuki Tamaoki [10'+5']

Presenter affiliation: Hokkaido University, Sapporo, Japan.

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**Co-localization photoaffinity probe strategy unveils the anti-resistant binding site in the transmembrane domain of smooth-ended receptor**

Fang Zhou, Kang Ding, Yiqing Zhou, Youli Xiao, Suwen Zhao, Houchao Tao [10'+5']

Presenter affiliation: ShanghaiTechUniversity, Shanghai, China; Chinese Academy of Sciences, Shanghai, China.

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**Dual-function chromogenic screening-based CRISPR/Cas9 genome editing system for actinomycetes**

Qiushui Wang, Feng Xie, Lixin Zhang, Rolf Müller, Chengzhang Fu [10'+5']

Presenter affiliation: Helmholtz Institute for Pharmaceutical Research Saarland (HIPS), Saarbruecken, Germany; Helmholtz Centre for Infection Research, Saarbruecken, Germany.

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**2H-azirine-based reagents for chemoselective bioconjugation at carboxyl residues inside live cells**

Zhengqiu Li [10'+5']

Presenter affiliation: Jinan University, Guangzhou, China.

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TUESDAY, October 29—2:00 PM

**SESSION 3 POSTER SESSION**

**Application of a human-derived fusogenic peptide to intracellular delivery of therapeutic peptides**

Moeki Kikuchi, Kota Iwaki, Kei Fujiwara, Nobuhide Doi

Presenter affiliation: Keio University, Yokohama, Japan.

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**Identification of a novel compound that alters energy metabolism**

Hiroki Kobayashi, Hiroyuki Osada, Minoru Yoshida

Presenter affiliation: RIKEN CSRS, Wako, Japan.

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**A peptide-based fluorescent sensor for selective detection and imaging of glutathione**

Yongxin Li, Jiang Wu, Weisheng Liu

Presenter affiliation: Lanzhou University, Lanzhou, China.

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**Supramolecular cucurbituril coated nanomulberry diatomaceous earth composites as an increased recyclable-Adsorbent on diverse applications**

Huifang Liu, Yong Shin

Presenter affiliation: University of Ulsan College of Medicine, Seoul, South Korea; Biomedical Engineering Research Center, Seoul, South Korea; Asan Institute for Life Sciences, Seoul, South Korea.

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**Synthesis and immunological evaluation of (R)- and (S)-FSL-1 based antitumor vaccines**

Yonghui Liu, Wei Zhao

Presenter affiliation: Nankai University, Tianjin, China.

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- Development of NanoBiT-based 2- and 3-hybrid system in fission yeast**  
Akihisa Matsuyama, Minoru Yoshida  
 Presenter affiliation: RIKEN, Wako, Saitama, Japan; University of Tokyo, Tokyo, Japan. 17
- Comprehensive analysis of the mechanism of action of theonellamides, marine-derived antifungals, based on fission yeast ORFeome**  
Shinichi Nishimura, Akifumi Suganaga, Akihisa Matsuyama, Minoru Yoshida  
 Presenter affiliation: The University of Tokyo, Tokyo, Japan. 18
- Modular solid-phase synthesis and derivatisation of a novel lipodipeptide—A nanomolar cysteine protease inhibitor**  
Dávid Roman, Luka Raguž, Francois Keiff, Maja Rischer, Christine Beemelmans  
 Presenter affiliation: Leibniz Institute for Natural Product Research and Infection Biology – Hans Knöll Institute (HKI), Jena, Germany. 19
- FD-891 binds F-actin and inhibits PPI between F-actin and F-actin-binding proteins**  
Takeo Usui, Yuriika Yamada, Takashi Fujii, Takao Kataoka, Fumitaka Kudo, Tadashi Eguchi, Keiichi Namba  
 Presenter affiliation: University of Tsukuba, Tsukuba, Japan. 20
- Time-resolved protein activation by proximal decaging in living systems**  
Jie Wang, Yuan Liu, Yanjun Liu, Chu Wang, Peng Chen  
 Presenter affiliation: College of Chemistry and Molecular Engineering, Peking University, Beijing, China. 21
- Fishing GPx4 with ligand-directed tosyl functional probes**  
Shuangshuang Wang  
 Presenter affiliation: Huazhong University of Science & Technology, Wuhan, China. 22
- Green light lithography to create active protein micropatterns**  
Dongdong Xu, Solveig Bartelt, Samaneh Rasoulnejad, Fei Chen, Seraphine Wegner  
 Presenter affiliation: Max-Planck Institute for Polymer Research, Mainz, Germany. 23

**Observing ratcheting motion of biomacromolecules in an engineered biological nanopore**

Shuanghong Yan, Shuo Huang

Presenter affiliation: Nanjing University, Nanjing, China.

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**Development of anti-inflammatory agents targeting TonEBP**

Byeong Jin Ye, Hwan Hee Lee, Hyun Je Kang, Soo Youn Choi, Cheol-Min Park, Hyug Moo Kwon

Presenter affiliation: Ulsan National Institute of Science and Technology, Ulsan, South Korea.

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**A novel chresdihydrochalcone and a new chresphenylacetone with anti-Gram positive bacteria activities from *Streptomyces chrestomyceticus***

Weiyi She, Wenkang Ye, Feng Chen, Peiyuan Qian

Presenter affiliation: The Hong Kong University of Science and Technology, Hong Kong, Hong Kong; Shenzhen University, Shenzhen, China.

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**Development of phenylimidazole-based peptidomimetics as selective *Mycobacterium tuberculosis* proteasome inhibitors**

Wenhu Zhan, Hao-Chi Hsu, Trevor Morgan, Tierra Ouellette, Kristin Burns-Huang, Ryoma Hara, Adrian G. Wright, Toshihiro Imaeda, Rei Okamoto, Kenjiro Sato, Mayako Michino, Manoj Ramjee, Kazuyoshi Aso, Peter T. Meinke, Michael Foley, Carl F. Nathan, Huilin Li, Gang Lin

Presenter affiliation: Weill Cornell Medicine, New York, New York.

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TUESDAY, October 29—4:30 PM

**Chinese Tea and Beer Tasting**

Sponsored by **BioBAY**



**bioBAY**

TUESDAY, October 29—7:00 PM

**SESSION 4**      IMAGING

**Chairperson:**    **Young-Tae Chang**, POSTECH, Pohang, Korea

**Systematic search for live cell selective imaging probe through  
HOLD & GOLD**

Young-Tae Chang [20'+10']

Presenter affiliation: POSTECH Pohang, South Korea; IBS, Pohang,  
South Korea. 28

**Intraoperative rapid imaging of tiny tumors by novel fluorogenic  
probes for exopeptidases**

Yasuteru Urano [20'+10']

Presenter affiliation: The University of Tokyo, Tokyo, Japan; AMED,  
Tokyo, Japan. 29

**Cycling hypoxia imaging and PDT for hypoxic tumor cells**

Yuncong Chen, Yuming Zhang, Hao Yuan, Weijiang He, Zijian Guo  
[10'+5']

Presenter affiliation: Nanjing University, Nanjing, China. 30

**Development of fluorescent probes for visualizing an interaction  
between intra-nucleosomal histone H3 K9 tri-methylation and  
HP1 $\alpha$  chromodomain and live-cell imaging**

Kazuki Sasaki, Michihiro Suzuki, Akihiro Ito, Yoichi Nakao, Minoru  
Yoshida [10'+5']

Presenter affiliation: RIKEN CSRS, Wako, Japan. 31

WEDNESDAY, October 30—9:00 AM

**SESSION 5**      BIOSYNTHESIS AND ENGINEERING

**Chairperson:**    **Hiroyuki Osada**, RIKEN CSRS, Wako, Japan

**Biosynthesis and engineering of macrocyclic peptides**

Wilfred van der Donk [20'+10']

Presenter affiliation: Howard Hughes Medical Institute and the  
University of Illinois at Urbana-Champaign, Urbana, Illinois. 32

- Genome mining of bioactive natural products from fungi**  
Yi Tang [20'+10']  
 Presenter affiliation: University of California, Los Angeles, Los Angeles, California. 33
- Biosynthetic gene cluster of a D-tryptophan-containing lasso peptide, MS-271**  
Zhi Feng, Yasushi Ogasawara, Satoshi Nomura, Tohru Dairi [10'+5']  
 Presenter affiliation: Hokkaido University, Sapporo, Japan. 34
- One substrate, many products**  
Wenjia Gu, Debosmita Sardar, Elizabeth Pierce, Eric W. Schmidt [10'+5']  
 Presenter affiliation: University of Utah, Salt Lake City, Utah. 35
- Coffee / Tea Break**
- Enzymatic cyclization associated with a nonribosomal peptide/polyketide hybrid assembly line**  
Wen Liu [20'+10']  
 Presenter affiliation: Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai, China. 36
- Biosynthesis of tenuazonic acid in *Pyricularia oryzae***  
Hiroyuki Osada [20'+10']  
 Presenter affiliation: RIKEN Center for Sustainable Resource Science, Wako-shi, Saitama, Japan. 37
- Diverse intriguing post-translational modifications in ribosomal peptide biosynthesis**  
Liuji Huo [10'+5']  
 Presenter affiliation: Shandong University, Qingdao, China. 38
- A novel strategy to change the lipo of the nonribosomal lipopeptides**  
 Lin Zhong, Xiaotong Diao, Na Zhang, Fengwei Li, Hanna Chen, Youming Zhang, Dalei Wu, Xiaoying Bian [10'+5']  
 Presenter affiliation: Shandong University, Qingdao, China. 39

WEDNESDAY, October 30—1:30 PM

**Visit to Old Suzhou**

**SESSION 6** CHEMICAL COMMUNICATION AND ECOLOGY

**Chairperson:** **Rolf Müller**, Helmholtz Institute for Pharmaceutical Research Saarland (HIPS), Saarbrücken, Germany

**Unlocking nature's chemical treasure trove—Novel natural products from microbial symbionts**

Christine Beemelmans [20'+10']

Presenter affiliation: Leibniz-Institut für Naturstoff-Forschung und Infektionsbiologie, Jena, Germany.

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**The signaling molecule for the asexual reproduction of phytopathogenic and toxigenic *Fusarium***

Jianhua Qi, Lihong Cheng, Hiroyuki Osada, Toshio Nishikawa, Lan Xiang [20'+10']

Presenter affiliation: Zhejiang University, Hangzhou, China.

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**Antibiotic dialogues—Using old antibiotics to find new ones**

Mohammad R. Seyedsayamdost [20'+10']

Presenter affiliation: Princeton University, Princeton, New Jersey.

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**Microbiome associated with fungus-growing termite, a hidden treasure trove for drug discovery**

Huijuan Guo, René Benndorf, Nina Kreuzenbeck, Michael Poulsen, Christine Beemelmans [10'+5']

Presenter affiliation: Leibniz Institute for Natural Product Research and Infection Biology e.V., Hans-Knöll-Institute (HKI), Jena, Germany.

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**Chemical and genetic regulation of nitrogen catabolite repression by PAF complex in the fission yeast *Schizosaccharomyces pombe***

Shin Ohsawa, Yoko Yashiroda, Minoru Yoshida [10'+5']

Presenter affiliation: RIKEN, Wako, Japan.

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THURSDAY, October 31—9:00 AM

### KEYNOTE SPEAKER

**Introduction by: Minoru Yoshida**, RIKEN CSRS and University of Tokyo, Japan

#### **Leveraging the biosynthetic potential of myxobacteria**

Rolf Müller, Jennifer Herrmann, Katja Gemperlein, Daniel Krug, Ronald Garcia, Emilia Oueis [35'+10']

Presenter affiliation: Helmholtz-Institute for Pharmaceutical Research Saarland, Saarbrücken, Germany; Helmholtz Centre for Infection Research, Braunschweig, Germany.

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THURSDAY, October 31—9:45 AM

### SESSION 7 TARGET IDENTIFICATION AND BIOLOGY

**Chairperson: Minoru Yoshida**, RIKEN CSRS and University of Tokyo, Japan

#### **FITGE-based target identification—New tool in chemical biology**

Seung Bum Park [20'+10']

Presenter affiliation: Seoul National University, Seoul, South Korea.

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#### **WAD-LSTM—A new drug–target interaction prediction model based on wide and deep learning**

Song He, Yupeng Li, Zhongnan Zhang, Xiaochen Bo [10'+5']

Presenter affiliation: Beijing Institute of Radiation Medicine, Beijing, China.

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#### **Coffee / Tea Break**

#### **Leveraging resistance for chemical inhibitor design, validation and use**

Tarun M. Kapoor [20'+10']

Presenter affiliation: The Rockefeller University, New York, New York.

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#### **Target pathway identification of bioactive compounds by multifaceted approaches**

Ken Matsumoto, Shohei Takase, Rumi Kurokawa, Minoru Yoshida [10'+5']

Presenter affiliation: RIKEN, Wako, Japan.

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**Engineered biological nanopores for identifying chemical biology targets in single molecule**

Shuo Huang [10'+5']

Presenter affiliation: Nanjing University, Nanjing, China.

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THURSDAY, October 31—2:00 PM

**SESSION 8** TRANSLATIONAL CHEMICAL BIOLOGY AND DRUG DISCOVERY I

**Chairperson:** **Cheryl Arrowsmith**, University of Toronto, Toronto, Canada

**Mechanism of action of anticancer splicing modulators—  
Translational buffering linking splicing and cancer**

Minoru Yoshida [20'+10']

Presenter affiliation: RIKEN, Wako, Japan; The University of Tokyo, Tokyo, Japan.

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**Chemical modulation of RNA epigenetic modifications**

Liang Cheng, Li-Jun Xie, Rui-Li Wang, Xiao-Yang Jin [10'+5']

Presenter affiliation: Institute of Chemistry, Chinese Academy of Sciences, Beijing, China.

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**A *C. elegans*-based high-content screen identifies phenothiazines as promising leads for the treatment of  $\alpha$ 1-antitrypsin deficiency**

Marco Moreno, Zachary D. Dawson, Cliff J. Luke, Tunda Hidvegi, David A. Rudnick, David H. Perlmutter, Gary A. Silverman, Stephen C. Pak [10'+5']

Presenter affiliation: Washington University in St Louis, St Louis, Missouri.

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**Discovery and mechanisms of natural product-based protein aggregation small molecule inhibitors**

Bin Xu [10'+5']

Presenter affiliation: Virginia Tech, Blacksburg, Virginia.

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**Novel nortriterpenoids—A promising bioactive compound with significant antitumor activity against A549 and LoVo cells from the fruits of *Evodia rutaecarpa* (Wu Zhu Yu)**

Yu Sheng Shi [10'+5']

Presenter affiliation: The Hong Kong University of Science and Technology, Hong Kong, Hong Kong.

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## **Coffee / Tea Break**

### **Probing the epigenome using chemical biology**

Cheryl H. Arrowsmith [20'+10']

Presenter affiliation: Princess Margaret Cancer Centre, Toronto Canada; The Structural Genomics Consortium, Toronto, Canada; University of Toronto, Toronto Canada.

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### **Discovery of antivirals targeting the enterovirus D68**

Rami Musharrafieh, Yanmei Hu, Chunlon Ma, Jun Wang [10'+5']

Presenter affiliation: University of Arizona, Tucson, Arizona.

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### **Chemical screens identify GLUT1 inhibition as a therapeutic strategy for RB1-positive triple negative breast cancer**

Qin Wu, Wail alawi, Genevieve Deblois, David Cescon, Mathieu L. Lupien, Cheryl H. Arrowsmith [10'+5']

Presenter affiliation: University of Toronto, Toronto, Canada; University Health Network, Toronto, Canada.

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### **Smart pH-sensitive nanogels for enhancing synergistic anticancer effects of Integrin $\alpha v \beta 3$ specific apoptotic peptide and therapeutic nitric oxide**

Yurui Xu, Lei Sun, Shujun Feng, Jianmei Chen, Ya Gao, Leilei Guo, Xueying An, Yuanyuan Nie, Yu Zhang, Xiaoxuan Liu, Xinghai Ning [10'+5']

Presenter affiliation: Nanjing University, Nanjing, China.

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THURSDAY, October 31—6:00 PM

## **COCKTAILS and BANQUET**

FRIDAY, November 1—9:00 AM

### **SESSION 9 TRANSLATIONAL CHEMICAL BIOLOGY AND DRUG DISCOVERY II**

**Chairperson:** **Yan-Mei Li**, Tsinghua University, Beijing, China

### **Glycopeptide vaccines for cancer immunotherapy**

Yan-Mei Li [20'+10']

Presenter affiliation: Tsinghua University, Beijing, China.

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- Chemical therapeutics of genetic diseases caused by aberrant mRNA splicing**  
Masatoshi Hagiwara [20'+10']  
 Presenter affiliation: Kyoto University, Kyoto, Japan. 61
- Genomics-guided discovery of new antibiotics killing superbug**  
Yongxin Li [10'+5']  
 Presenter affiliation: The University of Hong Kong, Hong Kong, Hong Kong. 62
- Improving the efficiency of precise genome editing with site-specific Cas9-oligonucleotide conjugates**  
Xinyu Ling, Bingteng Xie, Xiaoqin Gao, Liying Chang, Wei Zheng, Heqi Chen, Mo Li, Tao Liu [10'+5']  
 Presenter affiliation: Peking University, Beijing, China. 63
- Lipidomic profilings reveal the natural lipid ligands of  $\alpha$ -synuclein in regulating its function and pathology**  
Cong Liu, Chunyu Zhao, Zheng-Jiang Zhu [10'+5']  
 Presenter affiliation: Interdisciplinary Research Center on Biology and Chemistry (IRCBC), Shanghai Institute of Organic Chemistry (SIOC), Shanghai, China. 64
- Coffee / Tea Break***
- Targeting and activation of platinum anticancer complexes**  
Zijian Guo [20'+10']  
 Presenter affiliation: Nanjing University, Nanjing, China. 65
- Discovery of small molecule anticancer Immunity enhancers through the HTiP platform**  
Haian Fu [20'+10']  
 Presenter affiliation: Emory University School of Medicine, Atlanta, Georgia. 66

### **Closing Remarks**

**Yan-Mei Li**

Tsinghua University, China

**Maoyen Chi**

Cold Spring Harbor-Asia