

## The 59<sup>th</sup> Japanese Peptide Symposium

October 26 (Wednesday)

9:40–9:50      **Opening Remarks** (Takayuki Doi)

9:50–10:56      **Young Investigator's Oral Presentations** (8 min talk, 2 min discussion, 1 min speaker exchange)

**Session 1** (chairs: Kentaro Takayama, Yoshiro Chuman)

**Y-01      Investigation of the immunogenicity of mirror-image single-domain antibody binding to vascular endothelial growth factor**

Keisuke Aoki<sup>1,2</sup>, Motohiro Nonaka<sup>3</sup>, Sakiho Oda<sup>3</sup>, Katsuaki Higashi<sup>3</sup>, Asako Manabe<sup>3</sup>, Shinsuke Inuki<sup>1</sup>, Hiroaki Ohno<sup>1</sup>, Shinya Oishi<sup>1,2</sup> (<sup>1</sup>Graduate School of Pharmaceutical Sciences, Kyoto University, <sup>2</sup>Department of Medicinal Chemistry, Kyoto Pharmaceutical University, <sup>3</sup>Graduate School of Medicine, Kyoto University)

**Y-02      Identification of biomolecules that contribute to the activity of the cytosolic delivery peptide L17E**

Masashi Kuriyama, Hisaaki Hirose, Yoshimasa Kawaguchi, Shiroh Futaki (Institute for Chemical Research, Kyoto University)

**Y-03      Mitocryptide-3: cellular roles of G<sub>12</sub> protein in the signaling for mitocryptide-3**

Ryota Tanemura, Takayuki Marutani, Koji Ohura, Takumi Sasaki, Shuheji Tsuchiguchi, Yoshiaki Kiso, Hidehito Mukai (Laboratory of Peptide Science, Graduate School of Bio-Science, Nagahama Institute of Bio-Science and Technology)

**Y-04      First direct evidence for direct cell-membrane penetrations of polycationic homopoly(amino acid)s produced by bacteria**

Yamato Takeuchi, Kazunori Ushimaru, Kohei Kaneda, Chitose Maruyama, Takashi Ito, Yoshimitsu Hamano (Graduate School of Bioscience and Biotechnology, Fukui Prefectural University)

**Y-05      A serum albumin-binding helix-loop-helix peptide tag for prolonged activity of biopharmaceuticals**

Yuto Nakatani<sup>1</sup>, Zhengmao Ye<sup>2</sup>, Yuki Ishizue<sup>3</sup>, Taishi Higashi<sup>3</sup>, Teruko Imai<sup>3,4</sup>, Ikuo Fujii<sup>1</sup>, Masataka Michigami<sup>1</sup> (<sup>1</sup>Graduate School of Science, Osaka Prefecture University, <sup>2</sup>Interprotein Corporation, <sup>3</sup>Graduate School of Pharmaceutical Science, Kumamoto University, <sup>4</sup>Daiichi University of Pharmacy)

**Y-06      Development of nanoparticle-based protein degradation inducers based on nucleic acid delivery**

Hidetomo Yokoo<sup>1</sup>, Satoshi Uchida<sup>1</sup>, Yosuke Demizu<sup>2</sup>, Makoto Oba<sup>1</sup> (<sup>1</sup>Graduate School of Medical Science, Kyoto Prefectural University of Medicine, <sup>2</sup>National Institute of Health Sciences)

10:56–11:10      **Break**

11:10–12:16      **Young Investigator's Oral Presentations** (8 min talk, 2 min discussion, 1 min speaker exchange)

**Session 2** (chairs: Tetsuo Narumi, Hidekazu Katayama)

**Y-07      Discovery of novel egg-derived peptides that improve cognitive function after oral administration**

Takanobu Nakajima<sup>1</sup>, Maiko Shobako<sup>1</sup>, Kentaro Kaneko<sup>1</sup>, Masaru Sato<sup>2</sup>, Kousaku Ohinata<sup>1</sup> (<sup>1</sup>Division of Food Science and Biotechnology, Graduate School of Agriculture, Kyoto University, <sup>2</sup>Department of Applied Genomics, Kazusa DNA Research Institute)

- Y-08 Rapid, mild, and column-free peptide chain elongation via one-flow, three-component coupling approach**  
Naoto Sugisawa, Akira Ando, Shinichiro Fuse (Graduate School of Pharmaceutical Sciences, Nagoya University)
- Y-09 Development of a novel peptide condensation method**  
Yasuhiro Akai, Yuya Asahina, Hironobu Hojo (Institute for Protein Research, Osaka University)
- Y-10 An efficient flow-based peptide synthesis using capping and peptide capturing**  
Nanami Ogaki<sup>1</sup>, Yuta Maki<sup>1,2</sup>, Ryo Okamoto<sup>1,2</sup>, Bradley L. Pentelute<sup>3</sup>, Yasuhiro Kajihara<sup>1,2</sup> (<sup>1</sup>Department of Chemistry, Graduate School of Science, Osaka University, <sup>2</sup>Forefront Research Center, Graduate School of Science, Osaka University, <sup>3</sup>Department of Chemistry, Massachusetts Institute of Technology)
- Y-11 Development of intramolecular thioetherification on peptide backbone for chemical synthesis of sactipeptide**  
Junya Hayashi, Daishiro Kobayashi, Masaya Denda, Akira Otaka (Institute of Biomedical Sciences and Graduate School of Pharmaceutical Sciences, Tokushima University)
- Y-12 Direction-switchable one-pot peptide ligation using two orthogonal protecting group strategies**  
Koki Nakatsu<sup>1</sup>, Akimitsu Okamoto<sup>2</sup>, Gosuke Hayashi<sup>1</sup>, Hiroshi Murakami<sup>1,3</sup> (<sup>1</sup>Graduate School of Engineering, Nagoya University, <sup>2</sup>Graduate School of Engineering, The University of Tokyo, <sup>3</sup>Institutes of Innovation for Future Society, Nagoya University,)
- 12:16–12:30 **Break**
- 12:30–13:20 **Lunch Break & Luncheon Seminar (B1F Sub Hall)**
- 13:20–13:30 **Break**
- 13:30–14:36 **Young Investigator's Oral Presentations** (8 min talk, 2 min discussion, 1 min speaker exchange)  
**Session 3** (chairs: Hiroshi Inaba, Yuya Asahina)
- Y-13 Synthesis of short peptides in 384-well plates for generating large libraries of macrocyclic compounds**  
Mischa Schüttel, Edward Will, Christian Heinis (Institute of Chemical Sciences and Engineering, School of Basic Sciences, École Polytechnique Fédérale de Lausanne (EPFL))
- Y-14 The calmodulin fusion tag prevents degradation and inhibits aggregation of fused antimicrobial peptides**  
Mitsuki Shibagaki<sup>1</sup>, Waka Ueda<sup>1</sup>, Kotaro Tsukioka<sup>2</sup>, Fumi Hirai<sup>2</sup>, Kohei Kano<sup>1</sup>, Hao Gu<sup>1</sup>, Tomoyasu Aizawa<sup>1,2,3</sup> (<sup>1</sup>Graduate School of Life Science, Hokkaido University, <sup>2</sup>School of Science, Hokkaido University, <sup>3</sup>Faculty of Advanced Life Science, Hokkaido University)
- Y-15 Cytochrome P450<sub>BH</sub> enables versatile peptide cyclisation to generate histidine or tryptophan crosslinks to tyrosine**  
Yongwei Zhao<sup>1,2,3</sup>, Edward A. Marchal<sup>1,2,3</sup>, Julien Tailhades<sup>1,2,3</sup>, Max J. Cryle<sup>1,2,3</sup> (<sup>1</sup>Department of Biochemistry and Molecular Biology, The Monash Biomedicine Discovery Institute, Monash University, <sup>2</sup>EMBL Australia, Monash University, <sup>3</sup>ARC Centre of Excellence for Innovations in Peptide and Protein Science)

**Y-16 Construction of a lipid bilayer permeability assay for investigations on the structure-permeability relationship of cyclic peptides**

Takahiro Ono<sup>1</sup>, Kazuhito V. Tabata<sup>2</sup>, Yuki Goto<sup>3</sup>, Hiroaki Suga<sup>3</sup>, Hiroyuki Noji<sup>2</sup>, Jumpei Morimoto<sup>1</sup>, Shinsuke Sando<sup>1,4</sup> (<sup>1</sup>Department of Chemistry & Biotechnology, Graduate School of Engineering, The University of Tokyo, <sup>2</sup>Department of Applied Chemistry, Graduate School of Engineering, The University of Tokyo, <sup>3</sup>Department of Chemistry, Graduate School of Science, The University of Tokyo, <sup>4</sup>Department of Bioengineering, Graduate school of Engineering, The University of Tokyo)

**Y-17 Development of helix-forming  $\alpha/\delta$ -peptide foldamers by cyclopropane-based conformational restriction strategy targeting protein-protein interactions**

Nanase Ochiai<sup>1</sup>, Koh Takeuchi<sup>2</sup>, Makoto Nagata<sup>1</sup>, Koichi Fujiwara<sup>1</sup>, Mizuki Watanabe<sup>1</sup>, Satoshi Shuto<sup>1</sup> (<sup>1</sup>Faculty of Pharmaceutical Sciences, Hokkaido University, <sup>2</sup>Graduate School of Pharmaceutical Sciences, The University of Tokyo)

**Y-18 Preparation and immunological evaluation of lipid nanoparticle-based cancer peptide vaccine**

Keita Ito<sup>1</sup>, Yoshiyuki Manabe<sup>1,2</sup>, Kazuya Kabayama<sup>1,2</sup>, Shino Ohshima<sup>3</sup>, Yoshie Kametani<sup>3</sup>, Masatoshi Maeki<sup>4</sup>, Manabu Tokeshi<sup>4</sup>, Koichi Fukase<sup>1,2</sup> (<sup>1</sup>Graduate School of Science, Osaka University, <sup>2</sup>Forefront Research Center, Osaka University, <sup>3</sup>School of Medicine, Tokai University, <sup>4</sup>Faculty of Engineering, Hokkaido University)

14:36–14:50 **Break**

14:50–15:56 **Young Investigator's Oral Presentations** (8 min talk, 2 min discussion, 1 min speaker exchange)  
**Session 4** (chairs: Takashi Iwasaki, Tsuyoshi Takahashi)

**Y-19 Readthrough effect of a nonsense mutation in p53 tumor suppressor gene by negamycin derivatives**

Noriko Omura<sup>1</sup>, Ayaka Ema<sup>1</sup>, Akihiro Taguchi<sup>1</sup>, Keisuke Hamada<sup>1</sup>, Sho Konno<sup>1</sup>, Kentaro Takayama<sup>1,2</sup>, Atsuhiko Taniguchi<sup>1</sup>, Yoshio Hayashi<sup>1</sup> (<sup>1</sup>Department of Medicinal Chemistry, Tokyo University of Pharmacy and Life Sciences, <sup>2</sup>Department of Environmental Biochemistry, Kyoto Pharmaceutical University)

**Y-20 Synthesis of inhibitors targeting the main protease of SARS-CoV-2 for therapeutics of COVID-19**

Takahiro Ishii<sup>1</sup>, Kohei Tsuji<sup>1</sup>, Takuya Kobayakawa<sup>1</sup>, Nobuyo Higashi-Kuwata<sup>2</sup>, Chika Azuma<sup>1</sup>, Miyuki Nakayama<sup>1</sup>, Kouki Shinohara<sup>1</sup>, Yutaro Miura<sup>1</sup>, Hironori Hayashi<sup>3</sup>, Shin-ichiro Hattori<sup>2</sup>, Haydar Bulut<sup>4</sup>, Shogo Misumi<sup>5</sup>, Hiroaki Mitsuya<sup>2,4,6</sup>, Hirokazu Tamamura<sup>1</sup> (<sup>1</sup>Institute of Biomaterial and Bioengineering, Tokyo Medical and Dental University (TMDU), <sup>2</sup>National Center for Global Health and Medicine Research Institute, <sup>3</sup>International Research Institute of Disaster Science, Tohoku University, <sup>4</sup>National Cancer Institute, National Institutes of Health, <sup>5</sup>Faculty of Life Sciences, Kumamoto University, <sup>6</sup>Kumamoto University Hospital)

**Y-21 Molecular transport from enveloped viral replica embedded with connexin into liposomes and cells**

Hirotō Furukawa<sup>1</sup>, Hiroshi Inaba<sup>1</sup>, Yoshihiro Sasaki<sup>2</sup>, Kazunari Akiyoshi<sup>2</sup>, Kazunori Matsuura<sup>1</sup> (<sup>1</sup>Graduate School of Engineering, Tottori University, <sup>2</sup>Graduate School of Engineering, Kyoto University)

**Y-22 Obtaining pigment epithelium-derived factor (PEDF)-binding peptides by a yeast two-hybrid screening of a combinatorial triple-helical peptide library**

Khine Phyu Phyu Thant<sup>1</sup>, Ryo Masuda<sup>2</sup>, Kazuki Kawahara<sup>3</sup>, Yuji Kobayashi<sup>4</sup>, Takaki Koide<sup>1,2</sup>  
(<sup>1</sup>Department of Chemistry and Biochemistry, Graduate School of Advanced Science and Engineering, Waseda University, <sup>2</sup>Waseda Research Institute for Science and Engineering, Waseda University, <sup>3</sup>Graduate School of Pharmaceutical Sciences, Osaka University, <sup>4</sup>Graduate School of Engineering, Osaka University)

**Y-23 Identification of guanidine bis-prenyltransferase with broad substrate tolerance**

Kei Fujita, Kenichi Matsuda, Toshiyuki Wakimoto (Faculty of Pharmaceutical Sciences, Hokkaido University)

**Y-24 Accurate profiling of substrate preference for lactazole biosynthetic enzymes via a combination of mRNA display and machine learning**

Jun Shi Chang, Alexander A. Vinogradov, Yuki Goto, Hiroaki Suga (Department of Chemistry, Graduate School of Science, The University of Tokyo)

15:56–16:10 **Break**

16:10–17:00 **Invited Lectures**

(chair: Hisakazu Mihara)

**K-1 Hydrazone photoswitches for structural control of short peptides**

Kwonjung Lee, Sunbum Kwon (Department of Chemistry, Chung-Ang University)

(chair: Hirokazu Tamamura)

**K-2 Exploration of sequence-based design for helical  $\alpha/\beta/\gamma$ -peptide foldamer**

Young-Hee Shin (Department of Chemical Engineering & Biotechnology, Tech. University of Korea)

17:00–17:10 **Break**

17:10–19:10 **Poster Presentations**

**Session 1 (1P-001–073)**

Odd numbers: 17:10–18:10

Even numbers: 18:10–19:10

**October 27 (Thursday)**

9:00–9:57 **Oral Presentations** (15 min talk, 3 min discussion, 1 min speaker exchange)

**Session 1** (chairs: Akira Shigenaga, Kenta Teruya)

**O-01 Tyrosine click using urazole radical reagents**

Shinichi Sato<sup>1,2</sup>, Shogo Miyano<sup>2</sup>, Keita Nakane<sup>2</sup>, Yuya Tanaka<sup>3</sup>, Shusuke Tomoshige<sup>2</sup>, Minoru Ishikawa<sup>2</sup>

(<sup>1</sup>Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, <sup>2</sup>Graduate School of Life Sciences, Tohoku University, <sup>3</sup>Laboratory for Chemistry and Life Science, Institute of Innovative Research, Tokyo Institute of Technology)

**O-02 Functional analysis of an ion-channel-forming peptidic natural product gramicidin A**

Hiroaki Itoh, Yun-Wei Xue, Masayuki Inoue (Graduate School of Pharmaceutical Sciences, The University of Tokyo)

**O-03 Catalytic photooxygenation of tau protein amyloid**

Youhei Sohma<sup>1,2</sup>, Taka Sawazaki<sup>1,2</sup>, Takanobu Suzuki<sup>3</sup>, Yukiko Hori<sup>3</sup>, Taisuke Tomita<sup>3</sup>, Motomu Kanai<sup>2</sup> (1School of Pharmaceutical Sciences, Wakayama Medical University, 2Synthetic Organic Chemistry Lab., Graduate School of Pharmaceutical Sciences, The University of Tokyo, 3Neuropathology and Neuroscience Lab., Graduate School of Pharmaceutical Sciences, The University of Tokyo)

9:57–10:10 **Break**

10:10–11:07 **Oral Presentations** (15 min talk, 3 min discussion, 1 min speaker exchange)

**Session 2** (chairs: Ikuhiko Nakase, Youhei Sohma)

**O-04 Structural factors governing vesicle detection of curvature-sensing peptides**

Kenichi Kawano<sup>1</sup>, Fumiaki Yokoyama<sup>2,3</sup>, Kouhei Kamasaka<sup>2</sup>, Jun Kawamoto<sup>2</sup>, Takuya Ogawa<sup>2</sup>, Tatsuo Kurihara<sup>2</sup>, Katsumi Matsuzaki<sup>1</sup> (1Graduate School of Pharmaceutical Sciences, Kyoto University, 2Institute for Chemical Research, Kyoto University, 3Graduate School of Science, The University of Tokyo)

**O-05 3D structure, bioactivity, and membrane permeability of PF1171B, a cyclic pentapeptide with inhibitory activity against apolipoprotein B production**

Yuichi Masuda, Masaya Honda, Ryoma Ikeuchi, Minoru Inagaki (Graduate School of Bioresources, Mie University)

**O-06 Structure-activity relationship study on the P1' structure of a peptidic BACE1 inhibitor and its application to macrocyclic derivatives**

Kazuya Kobayashi<sup>1</sup>, Takuya Otani<sup>2</sup>, Saki Ijiri<sup>1</sup>, Yuki Kawasaki<sup>1</sup>, Hiroki Matsubara<sup>1</sup>, Takahiro Miyagi<sup>1</sup>, Taishi Kitajima<sup>1</sup>, Risa Iseki<sup>1</sup>, Katsuyasu Ishizawa<sup>1</sup>, Naoka Shindo<sup>1</sup>, Kouta Okawa<sup>1</sup>, Kouta Ueda<sup>1</sup>, Syun Ando<sup>1</sup>, Momoka Kawakita<sup>1</sup>, Yasunao Hattori<sup>3</sup>, Kenichi Akaji<sup>1</sup> (1Department of Medicinal Chemistry, Kyoto Pharmaceutical University, 2Near InfraRed Photo-ImmunoTherapy Research Institute, Kansai Medical University, 3Center for Instrumental Analysis, Kyoto Pharmaceutical University)

11:07–11:20 **Break**

11:20–12:17 **Oral Presentations** (15 min talk, 3 min discussion, 1 min speaker exchange)

**Session 3** (chairs: Gosuke Hayashi, Akihiro Taguchi)

**O-07 Protecting group transformable with gold catalysis and application to supramolecular gel**

Tomoya Yamamoto<sup>1</sup>, Tsung-che Chang<sup>1</sup>, Akiko Nakamura<sup>1</sup>, Katsunori Tanaka<sup>1,2</sup> (1Biofunctional Synthetic Chemistry Laboratory, RIKEN Cluster for Pioneering Research, 2Department of Chemical Science and Engineering, School of Materials and Chemical Technology, Tokyo Institute of Technology)

**O-08 A practical synthesis of *N*-methylated peptides using C-terminally unprotected *N*-methyl amino acids**

Yutaka Kobayashi<sup>1</sup>, Haruaki Kurasaki<sup>1</sup>, Akihiro Nagaya<sup>2</sup>, Ayumu Matsuda<sup>1</sup>, Masatoshi Matsumoto<sup>1</sup>, Koki Morimoto<sup>1</sup>, Tomonori Taguri<sup>1</sup>, Hisayuki Takeuchi<sup>2</sup>, Michiharu Handa<sup>2</sup>, Douglas R. Cary<sup>1</sup>, Naoki Nishizawa<sup>2</sup>, Keiichi Masuya<sup>1</sup> (1PeptiDream Inc., 2Chemical Research Laboratories, Nissan Chemical Corporation)

- O-09 Selective cleavable silyl protective groups for convergent liquid-phase peptide synthesis**  
 Akihiro Nagaya<sup>1</sup>, Shota Murase<sup>1</sup>, Yuji Mimori<sup>1</sup>, Kazuya Wakui<sup>1</sup>, Madoka Yoshino<sup>1</sup>, Ayumu Matsuda<sup>2</sup>,  
 Yutaka Kobayashi<sup>2</sup>, Haruaki Kurasaki<sup>2</sup>, Douglas R. Cary<sup>2</sup>, Keiichi Masuya<sup>2</sup>, Michiharu Handa<sup>1</sup>, Naoki Nishizawa<sup>1</sup> (<sup>1</sup>Chemical Research Laboratories, Nissan Chemical Corporation, <sup>2</sup>PeptiDream Inc.)
- 12:17–12:30 **Break**
- 12:30–13:20 **Lunch Break & Luncheon Seminar (B1F Sub Hall)**
- 13:20–13:30 **Break**
- 13:30–14:30 **Japanese Peptide Society General Meeting**
- 14:30–14:45 **Break**
- 14:45–14:50 **Announcement for The 60<sup>th</sup> Japanese Peptide Symposium**
- 14:50–15:47 **Oral Presentations** (15 min talk, 3 min discussion, 1 min speaker exchange)  
**Session 4** (chairs: Takaki Koide, Yuji Ito)
- O-10 Substrates made from amorphous carbon for peptide-microarrays, the novel biodetection system**  
Kiyoshi Nokihara, Yuki Tominaga, Atsushi Kitagawa, Takeshi Kasama, Masato Fujita, Shun Nokihara  
 (HiPep Laboratories)
- O-11 Design of functional dendrimers for detection of the lymph node-resident metastatic tumor cells**  
Chie Kojima, Kento Nagai (Graduate School of Engineering, Osaka Metropolitan University)
- O-12 Development of cytosolic delivery methods using inkjet system and cell-penetrating peptides**  
 Mika Omura, Ikuhiko Nakase (Graduate School of Science, Osaka Metropolitan University)
- 15:47–16:00 **Break**
- 16:00–16:57 **Oral Presentations** (15 min talk, 3 min discussion, 1 min speaker exchange)  
**Session 5** (chairs: Hidehito Mukai, Ayami Matsushima)
- O-13 Aromatic compound scavenging ability of thermoresponsive short elastin-like peptide (FPGVG)<sub>n</sub> analogs**  
Keitaro Suyama<sup>1</sup>, Masayuki Murashima<sup>2</sup>, Iori Maeda<sup>3</sup>, Takeru Nose<sup>1,3</sup> (<sup>1</sup>Faculty of Arts and Science, Kyushu University, <sup>2</sup>Department of Chemistry, Faculty and Graduate School of Science, Kyushu University, <sup>3</sup>Department of Physics and Information Technology, Kyushu Institute of Technology)
- O-14 Sequence-activity relationship analysis of integrin  $\alpha\beta 5$ -binding RGD peptides**  
Yuji Yamada, Toru Onda, Yuri Wada, Keisuke Hamada, Yamato Kikkawa, Motoyoshi Nomizu (School of Pharmacy, Tokyo University of Pharmacy and Life Sciences)
- O-15 A collagen-like peptide polymer that forms a hydrogel by *O*-*N* acyl migration**  
Shinichiro Ichise<sup>1</sup>, Takaki Koide<sup>2,3</sup> (<sup>1</sup>Department of Clinical Nutrition, Kitasato Junior College of Health and Hygienic Science, <sup>2</sup>Department of Chemistry and Biochemistry, School of Advanced Science and

Engineering, Waseda University, <sup>3</sup>Waseda Research Institute for Science and Engineering, Waseda University)

16:57–17:10 **Break**

17:10–19:10 **Poster Presentations**

**Session 2 (2P-001–073)**

Odd numbers: 17:10–18:10

Even numbers: 18:10–19:10

### **October 28 (Friday)**

9:00–9:40 **Lecture of the Akabori Memorial Award 2022**

(chair: Kazuyasu Sakaguchi)

**Peptides that affect membrane structure and permeability**

Shiroh Futaki (Institute for Chemical Research, Kyoto University)

9:40–10:20 **Invited Lecture**

(chair: Takayuki Doi)

**I-1 Chemical protein synthesis via serine/threonine ligation and beyond**

Xuechen Li (Department of Chemistry, The University of Hong Kong)

10:20–10:30 **Break**

10:30–11:08 **Oral Presentations** (15 min talk, 3 min discussion, 1 min speaker exchange)

**Session 6** (chairs: Taku Yoshiya, Yuichi Masuda)

**O-16 Rapid and efficient syntheses of tryptophan derivatives using continuous-flow quaternization-substitution reaction of gramines with chiral nucleophilic glycine-derived Ni-complex**

Daichi Koiwa<sup>1</sup>, Masayuki Ohira<sup>1</sup>, Takahiro Hiramatsu<sup>1</sup>, Hidenori Abe<sup>1</sup>, Tetsuji Kawamoto<sup>1</sup>, Yuji Ishihara<sup>1</sup>, Bernardo Ignacio<sup>2</sup>, Noel Mansour<sup>2</sup>, Todd Romoff<sup>2</sup> (<sup>1</sup>Research and Development Division, Hamari Chemicals, Ltd., <sup>2</sup>Hamari Chemicals USA Inc.)

**O-17 Synthesis and biological evaluation of cytotoxic cyclodepsipeptide trichomide D**

Masahito Yoshida<sup>1,2</sup>, Tomoya Matsushita<sup>1</sup>, Shinji Kondo<sup>3</sup>, Hiroko Isoda<sup>3,4,5</sup>, Hideo Kigoshi<sup>1,2,3</sup> (<sup>1</sup>Degree Programs in Pure and Applied Sciences, University of Tsukuba, <sup>2</sup>Faculty of Pure and Applied Sciences, University of Tsukuba, <sup>3</sup>Alliance for Research on the Mediterranean and North Africa (ARENA), University of Tsukuba, <sup>4</sup>Faculty of Life and Environmental Sciences, University of Tsukuba, <sup>5</sup>Open Innovation Laboratory for Food and Medicinal Resource Engineering, National Institute of Advanced Industrial Science and Technology and University of Tsukuba)

11:08–11:20 **Break**

- 11:20–12:17 **Oral Presentations** (15 min talk, 3 min discussion, 1 min speaker exchange)  
**Session 7** (chairs: Shinichiro Fuse, Masahito Yoshida)
- O-18 Tag-assisted liquid-phase peptide synthesis: process evolutions and application to head-to-tail cyclizations by a “molecular claw” approach**  
Yohei Okada<sup>1</sup>, Sayuri Yamagami<sup>1</sup>, Hideaki Suzuki<sup>2</sup>, Ichiro Shima<sup>2</sup>, Kazuaki Kanai<sup>2</sup>, Yoshikazu Kitano<sup>1</sup>, Kazuhiro Chiba<sup>1</sup> (<sup>1</sup>Department of Applied Biological Science, Tokyo University of Agriculture and Technology, <sup>2</sup>Research and Development Department, JITSUBO Co., Ltd., Life Science Research Center)
- O-19 Highly sterically hindered peptide bond formation between  $\alpha,\alpha$ -disubstituted  $\alpha$ -amino acids and *N*-alkyl cysteines using  $\alpha,\alpha$ -disubstituted  $\alpha$ -amidonitrile**  
Xiaoling Wang, Jing Li, Yujiro Hayashi (Graduate School of Science, Tohoku University)
- O-20 Development of tCAP reagent for site-specific modification of IgG antibodies**  
Taku Yoshiya<sup>1,2</sup>, Shugo Tsuda<sup>1</sup>, Yukie Nohara<sup>1</sup>, Ken Sakamoto<sup>1</sup>, Shun Masuda<sup>1</sup>, Abdur Rafique<sup>3</sup>, Yuji Ito<sup>3</sup> (<sup>1</sup>Peptide Institute, Inc., <sup>2</sup>Institute for Protein Research, Osaka University, <sup>3</sup>Graduate School of Science and Engineering, Kagoshima University)
- 12:17–12:30 **Award announcement and Break**
- 12:30–13:20 **Lunch Break & Luncheon Seminar (B1F Sub Hall)**
- 13:20–13:30 **Break**
- 13:30–14:27 **Oral Presentations** (15 min talk, 3 min discussion, 1 min speaker exchange)  
**Session 8** (chairs: Wataru Nomura, Shinichi Sato)
- O-21 New drug modalities: generation of VEGF-targeting helix–loop–helix peptides for tumor growth inhibition**  
Masataka Michigami<sup>1</sup>, Kunpei Notsu<sup>1</sup>, Zhengmao Ye<sup>2</sup>, Takatsugu Hirokawa<sup>3</sup>, Ikuhiko Nakase<sup>1</sup>, Ikuo Fujii<sup>1</sup> (<sup>1</sup>School of Science, Osaka Metropolitan University, <sup>2</sup>Interprotein Corporation, <sup>3</sup>Faculty of Medicine, University of Tsukuba)
- O-22 Design of self-assembling peptide tags for protein-based supramolecular construction in living cells**  
Takayuki Miki, Masahiro Hashimoto, Hiroki Takahashi, Sae Nakayama, Hisakazu Mihara (School of Life Science and Technology, Tokyo Institute of Technology)
- O-23 A novel macrocyclic peptide dimer format toward construction of a high throughput screening system**  
Kyohei Miyairi, Kenichiro Ito, Ken Hirose (Research Institute for Bioscience Products & Fine Chemicals, Ajinomoto Co., Inc.)
- 14:27–14:40 **Break**
- 14:40–15:18 **Oral Presentations** (15 min talk, 3 min discussion, 1 min speaker exchange)  
**Session 9** (chairs: Yuki Goto, Kohei Tsuji)
- O-24 Analyses and regulation of protein-protein interactions caused by phytohormone-related transcription factors by peptide-based chemical tools**



Yousuke Takaoka<sup>1</sup>, Ruiqi Liu<sup>1</sup>, Qi Li<sup>1</sup>, Kaho Suzuki<sup>1</sup>, Minoru Ueda<sup>1,2</sup> (<sup>1</sup>Graduate School of Science, Tohoku University, <sup>2</sup>Graduate School of Life Sciences, Tohoku University)

**O-25 Development of single-molecule enzyme activity-based protein profiling (SEAP) strategy for the detection of disease-related peptidase activities in blood samples**

Toru Komatsu<sup>1</sup>, Shingo Sakamoto<sup>1</sup>, Yu Kagami<sup>1</sup>, Rikiya Watanabe<sup>3</sup>, Kazufumi Honda<sup>4</sup>, Yasuteru Urano<sup>1,2</sup> (<sup>1</sup>Graduate School of Pharmaceutical Sciences, The University of Tokyo, <sup>2</sup>Graduate School of Medicine, The University of Tokyo, <sup>3</sup>RIKEN, <sup>4</sup>Graduate School of Medicine, Nippon Medical School)

15:18–15:30 **Break**

15:30–16:10 **Lectures of the Young Investigator Award**

(chair: Tsuyoshi Kawano)

**Discovery and applied studies of polyhistidine peptides**

Takashi Iwasaki (Graduate School of Sustainability Science, Tottori University)

(chair: Hironobu Hojo)

**Development of methodology for an efficient synthesis of glycoproteins**

Yuya Asahina (Health and Medical Business Division, NIPPON SHOKUBAI CO., LTD.)

16:10–16:50 **Lecture of the Japanese Peptide Society Award**

(chair: Shiroh Futaki)

**Mechanisms by which lipids shape and functionalize peptides and proteins**

Katsumi Matsuzaki (Graduate School of Pharmaceutical Sciences, Kyoto University)

16:50–17:00 **Closing Remarks** (Takayuki Doi)