

The 61st Japanese Peptide Symposium

October 29 (Tuesday)

- 9:30–9:35 **Opening Remarks (Hiroshi Murakami)**
- 9:35–10:40 **Young Investigator's Oral Presentations** (10 min talk, 2 min discussion, 1 min speaker exchange)
 Session 1 (chairs: Kentaro Takayama, Masaya Denda)
- Y-01 Development of chloroalkene-type dipeptide isosteres for amyloid-beta aggregation inhibitors**
Kenichi Yamamoto, Takuya Kobayakawa, Kohei Tsuji, Hirokazu Tamamura (Institute of Biomaterials and Bioengineering, Institute of Science Tokyo)
- Y-02 Development of novel thioether-mediated sulfenylation of Trp residue for chemical modification of peptides**
Hayate Shida¹, Akihiro Taguchi¹, Yuma Tokita¹, Haruki Miyashita¹, Shinpei Kasama¹, Sho Konno¹, Atsuhiko Taniguchi¹, Hiroshi Kaneko², Hidemasa Nakaminami², Yoshio Hayashi¹ (¹Department of Medicinal Chemistry, School of Pharmacy, Tokyo University of Pharmacy and Life Sciences, ²Department of Microbiology, School of Pharmacy, Tokyo University of Pharmacy and Life Sciences)
- Y-03 Development of the new synthetic method for β -mercaptohistidine derivatives for protein synthesis**
Yumi Fujioka¹, Yumi Matsui¹, Junpei Abe¹, Yuta Maki^{1,2}, Ryo Okamoto^{1,2}, Yasuhiro Kajihara^{1,2} (¹Department of Chemistry, Graduate School of Science, Osaka University, ²FRC, Graduate School of Science, Osaka University)
- Y-04 Diselenide metathesis in selenocysteine-substituted biologically active peptides**
Ying He, Toshiki Takei, Hironobu Hojo (Institute for Protein Research, Osaka University)
- Y-05 Determination of D-Dab residue linkage site of occidiofungins A-D and evaluation of their antifungals**
Rin Kainuma, Shigekazu Yano, Hiroyuki Konno (Graduate School of Science and Engineering, Yamagata university)
- 10:40–10:55 **Break**
- 10:55–12:00 **Young Investigator's Oral Presentations** (10 min talk, 2 min discussion, 1 min speaker exchange)
 Session 2 (chairs: Atsuhiko Taniguchi, Kohei Sato)
- Y-06 Highly sensitive label-free electrochemical biosensor for C-reactive protein detection using a high affinity peptide**

Hyo Jeong Yang, Jong Pil Park (Department of Food Science and Technology, and GreenTech-based Food Safety Research Group, BK21 Four, Chung-Ang University)

Y-07 Efficient synthesis of peptide thioesters via solid-phase diketopiperazine formation

Yuya Nakajima¹, Koki Nakatsu², Gosuke Hayashi¹, Hiroshi Murakami^{1,3} (¹Department of Biomolecular Engineering, Graduate School of Engineering, Nagoya University, ²Department of Chemistry, University of Cambridge, ³Institute of Nano-Life-Systems, Institutes of Innovation for Future Society, Nagoya University)

Y-08 Selenazolidine as a dually functioning aggregation disrupting unit

Kota Hidaka, Daishiro Kobayashi, Junya Hayashi, Masaya Denda, Akira Otaka (Institute of Biomedical Sciences and Graduate School of Pharmaceutical Sciences, Tokushima University)

Y-09 Solid-phase total synthesis and functional analysis of loihichelin C and its artificial analogues

Mizuki Sawada, Hiromu Kakizawa, Aoi Takeuchi, Hiroaki Itoh, Masayuki Inoue (Graduate School of Pharmaceutical Sciences, The University of Tokyo)

Y-10 Synthetic plan of *N*-acetyl-*N*-hydroxyornithine containing cyclic peptide siderophores: ASP2397 as an example

Mohamed Osama¹, Atsushi Tahara^{1,2}, Kosuke Ohsawa^{1,3}, Takayuki Doi¹ (¹Graduate School of Pharmaceutical Sciences, Tohoku University, ²Frontier Research Institute for Interdisciplinary Sciences (FRIS), Tohoku University, ³Faculty of pharmacy, Juntendo University)

12:00–12:15 **Break**

12:15–13:15 **Lunch Break & Luncheon Seminar (3F)**

13:15–13:30 **Break**

13:30–14:35 **Young Investigator's Oral Presentations** (10 min talk, 2 min discussion, 1 min speaker exchange)

Session 3 (chairs: Mizuki Watanabe, Kenichi Kawano)

Y-11 Structural and physicochemical analysis of how a rigid peptoid binds to MDM2

Marin Yokomine¹, Takumi Ueda^{2,3}, Koh Takeuchi³, Koji Umezawa⁴, Hideo Ago⁵, Hiroaki Matsuura⁵, Go Ueno⁵, Satoru Nagatoishi¹, Kouhei Tsumoto^{1,6}, Shinsuke Sando¹, Jumpei Morimoto¹ (¹Graduate School of Engineering, The University of Tokyo, ²Graduate School of Pharmaceutical Sciences, Osaka University, ³Graduate School of Pharmaceutical Sciences, The University of Tokyo, ⁴Graduate School of

Science and Technology, Shinshu University, ⁵RIKEN SPring-8 Center, ⁶Institute of Medical Science, The University of Tokyo)

Y-12 Mitocryptide-1: elucidation of its physiological roles and regulatory mechanisms on non-infectious innate immune responses induced by acetaminophen in mice

Hayato Katabuchi, Ayumi Kojima, Hakuu Fujiwara, Yoshito Takamuro, Hiroki Morikawa, Tatsuya Hattori, Yoshiaki Kiso, Shintaro Nomura, Hidehito Mukai (Graduate School of Bio-Science, Nagahama Institute of Bio-Science and Technology)

Y-13 Self-adjuvanting peptide based subunit vaccine formulated by (poly)glutamic acid-modified antigen with amphiphilic peptides and decapeptides

Jingyi Fan¹, Liaoshuang Ye¹, Istvan Toth^{1,2}, Rachel Stephenson¹ (¹The University of Queensland, School of Chemistry and Molecular Biosciences, ²The University of Queensland, Pharmacy Australia Centre of Excellence)

Y-14 Decoding the protein network responsible for thiol-mediated uptake

Saidbakhrom Saidjalolov, Filipe Coelho, Naomi Sakai, Stefan Matile (Department of Organic Chemistry, University of Geneva)

Y-15 Polysaccharides modified with attenuated cationic lytic peptides: formation of microparticles and their use in cytosolic antibody delivery

Junya Michibata¹, Yoshihiro Sasaki², Kazunari Akiyoshi², Shiroh Futaki¹ (¹Institute for Chemical Research, Kyoto University, ²Graduate School of Engineering, Kyoto University)

14:35–14:50 **Break**

14:50–15:55 **Young Investigator's Oral Presentations** (10 min talk, 2 min discussion, 1 min speaker exchange)

Session 4 (chairs: Rui Kamada, Takashi Misawa)

Y-16 Light-induced selective histidine modification enabled by immobilized photocatalysts

Zhengyi Liu¹, Keita Nakane^{1,2}, Yuki Hoshino³, Kosuke Dodo⁴, Shusuke Tomoshige², Minoru Ishikawa², Taniyuki Furuyama³, Shinichi Sato^{1,2} (¹Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, ²Graduate School of Life Sciences, Tohoku University, ³Graduate School of Natural Science and Technology, Kanazawa University, ⁴RIKEN Center for Sustainable Resource Science)

Y-17 Selection based discovery of peptides with amide bond cleavage activity and their characterization

Soichiro Nishio¹, Hiroaki Suga², Yuki Goto¹ (¹Graduate School of Science, Kyoto University, ²Graduate School of Science, The University of Tokyo)

Y-18 Development of a peptide sensor technology platform for nanoplastics identification

Shion Hasegawa¹, Toshiki Sawada¹, Yuzo Kitazawa², Takuya Kaneda², Takeshi Serizawa¹ (¹Department of Chemical Science and Engineering, Institute of Science Tokyo, ²Zeon Corporation)

Y-19 Porous metal-helix frameworks with dynamic pentapeptide foldamers

Ingyu Han, Soo Hyuk Choi (Department of Chemistry, Yonsei University)

Y-20 Precise construction of discrete four-stranded β -sheets by catenated metal-peptide rings

Eisuke Tsunekawa¹, Makoto Fujita^{1,2,3}, Tomohisa Sawada^{4,5} (¹Graduate School of Engineering, The University of Tokyo, ²Tokyo College, Institutes for Advanced Study, The University of Tokyo, ³Institute for Molecular Science, National Institutes of Natural Sciences, ⁴Laboratory for Chemistry and Life Science, Institute of Innovative Research, Tokyo Institute of Technology, ⁵JST-PRESTO)

15:55–16:10 **Break**

16:10–16:49 **Young Investigator's Oral Presentations** (10 min talk, 2 min discussion, 1 min speaker exchange)

Session 5 (chairs: Jumpei Morimoto, Yoshimasa Kawaguchi)

Y-21 Structure-guided bacteria-specificity and wide activity spectrum of endotoxin-responsive peptide nanonets

Nhan Dai Thien Tram¹, Jan Kazimierz Marzinek², Louis Perrin², Peter John Bond^{2,3}, Pui Lai Rachel Ee¹ (¹Department of Pharmacy, National University of Singapore, ²Bioinformatics Institute (BII), Agency for Science, Technology and Research (A*STAR), ³Department of Biological Sciences, National University of Singapore)

Y-22 A non-natural triple-helical peptide ligand selectively activates integrin $\alpha 2\beta 1$ via non-canonical molecular pathway

Shinsuke S. Shibata¹, Hiroya Oki², Kazuki Kawahara³, Kazunori K. Fujii¹, Takaki Koide^{1,4} (¹Department of Chemistry and Biochemistry, School of Advanced Science and Engineering, Waseda University, ²Department of Infection Metagenomics, Genome Information Research Center, Research Institute for Microbial Diseases, Osaka University, ³Graduate School of Pharmaceutical Sciences, Osaka University, ⁴Waseda Research Institute for Science and Engineering, Waseda University)

Y-23 Discovery of ultrahigh-affinity macrocyclic peptide heterodimers using RaPID system-based library vs. library selections

Yuto Ohno, Alexander Vinogradov, Hiroaki Suga (Graduate School of Science, The University of Tokyo)

17:00–18:30 **Poster Presentations Session 1**

Odd numbers: 17:00–17:45

Even numbers: 17:45–18:30

October 30 (Wednesday)

9:00–10:15 **Invited Lectures**

(chair: Yuki Goto, Gosuke Hayashi)

K-1 De novo designed cell-penetrating peptide self-assembly featuring distinctive tertiary structure

Soonsil Hyun (College of Pharmacy, Chungbuk National University)

K-2 Unnatural amphiphilic cationic peptides for efficient gene editing via mRNA delivery

Hyun Jin Kim¹, Eva M. Martin del Valle², Kanjiro Miyata³ (¹Department of Biological Engineering, Inha University, ²Chemical Engineering Department, University of Salamanca, ³Department of Materials Engineering, The University of Tokyo)

I-1 β -hairpin peptides as effective bacterial clustering biomaterials for treating infections

Rachel P.L. Ee (Department of Pharmacy and Pharmaceutical Sciences, National University of Singapore)

10:15–10:30 **Break**

10:30–11:45 **Invited Lectures**

(chair: Hirokazu Tamamura, Hiroshi Murakami)

I-2 Peptide-based pan-CoV fusion inhibitors

Shibo Jiang, Shuai Xia, Lu Lu (College of Basic Medical Science, Fudan University)

I-3 Peptide synthesis using unprotected amino acids

Junfeng Zhao (School of Pharmaceutical Sciences, Guangzhou Medical University)

I-4 Development of mirror-image monobodies to target oncogenic signaling

Oliver Hantschel¹, Nina Schmidt¹, Amit Kumar¹, Frank Abendroth², Magdalena Rakwalska-Bange¹, Lars-Oliver Essen³, Shohei Koide⁴, Olalla Vázquez² (¹Institute of Physiological Chemistry, Faculty of Medicine, Philipps University of Marburg, ²Faculty of Chemistry and Unit for Chemical Biology, Philipps University of Marburg, ³Faculty of Chemistry and Unit for Structural Biology, Philipps University of Marburg, ⁴New York University Langone Health)

11:45–12:00 **Break**

12:00–13:00 **Lunch Break & Luncheon Seminar (3F)**

13:00–13:15 **Break**

13:15–14:15 **Japanese Peptide Society General Meeting**

14:15–14:30 **Break**

14:30–15:30 Oral Presentations (15 min talk, 4 min discussion, 1 min speaker exchange)

Session 1 (chairs: Ayami Matsushima, Keitaro Suyama)

O-01 Suppressive effects of an intranasally administered neuromedin U receptor 2-selective agonist to appetite and prolactin secretion in mice

Asuka Nomoto, Yui Suzuki, Katsuya Morito, Kazuki Nagasawa, Kentaro Takayama (Laboratory of Environmental Biochemistry, Kyoto Pharmaceutical University)

O-02 Heterozygous p53 mutations of the tetramerization domain in Li-fraumeni syndrome exhibit dominant-negative effects on the wild-type protein

Rui Kamada, Madoka Kanno, Shuya Sakaguchi, Yu Toguchi, Toshiaki Imagawa, Kazuyasu Sakaguchi (Laboratory of Biological Chemistry, Department of Chemistry, Faculty of Science, Hokkaido University)

O-03 Mitochondrial targeting α -helical amphipathic peptides as a drug candidate for sarcopenia

Jaehoon Yu^{1,2} (¹Department of Chemistry & Education, Seoul National University, ²CAMP Therapeutics)

15:30–15:40 **Break**

15:40–17:10 **Poster Presentations Session 2**

Odd numbers: 15:40–16:25

Even numbers: 16:25–17:10

17:10–17:30 **Move to the banquet place**

17:30–19:30 **Banquet**

October 31 (Thursday)

9:00–10:20 **Oral Presentations** (15 min talk, 4 min discussion, 1 min speaker exchange)

Session 2 (chairs: Shinichi Sato, Kazuya Kobayashi)

O-04 N-terminal-specific dual modification of peptides through Cu-catalyzed one-pot [3+2] cycloaddition

Kazuya Kanemoto^{1,2}, Haruka Machida², Naohiko Yoshikai¹ (¹Graduate School of Pharmaceutical Sciences, Tohoku University, ²Faculty of Science and Engineering, Chuo University)

O-05 Synthesis of problematic peptide sequences using aspartic acid hydrazides

Kohei Sato^{1,2}, Haruna Uemura¹, Moeno Sakurai¹, Tetsuo Narumi^{1,2}, Nobuyuki Mase^{1,2} (¹Graduate School of Integrated Science and Technology, Shizuoka University, ²Research Institute of Green Science and Technology, Shizuoka University)

O-06 Development of cyclopropane-based foldamers mimicking protein secondary structures

Makoto Nagata¹, Nanase Ochiai¹, Marin Yokomine², Akiko Yoshida¹, Shunsuke Kita¹, Megumi Watanabe¹, Nobuki Okuyama¹, Katsumi Maenaka¹, Shinsuke Sando², Jumpei Morimoto², Hiroyuki Kumeta³, Koh Takeuchi⁴, Satoshi Shuto¹, Mizuki Watanabe¹ (¹Faculty of Pharmaceutical Sciences, Hokkaido University, ²Graduate School of Engineering, The University of Tokyo, ³Faculty of Advanced Life Science, Hokkaido University, ⁴Graduate School of Pharmaceutical Sciences, The University of Tokyo)

O-07 Synthesis based on affinity separation (SAS) for fully automated preparation of fluorogenic probes for enzymomics study

Toru Komatsu¹, Mayano Minoda¹, Yasuteru Urano^{1,2} (¹Graduate School of Pharmaceutical Sciences, The University of Tokyo, ²Graduate School of Medicine, The University of Tokyo)

10:20–10:35 **Break**

10:35–11:55 **Oral Presentations** (15 min talk, 4 min discussion, 1 min speaker exchange)

Session 3 (chairs: Taku Yoshiya, Fumihiro Ishikawa)

O-08 Classification of neuronal diseases using spinal fluids by the novel peptide microarrays

Yuki Tominaga¹, Takayuki Kondo^{2,3}, Shinji Ashida³, Chihiro Fujii², Kenji Usui⁴, Kiyoshi Nokihara¹ (¹HiPep Laboratories, ²Department of Neurology, Kansai Medical University Medical Center, ³Department of Neurology, Kyoto Prefectural University of Medicine, ⁴Faculty of Frontiers of Innovative Research in Science and Technology, Konan University)

O-09 Deep mutational scanning-guided design of a high-affinity helix–loop–helix peptide targeting G-CSF receptor

Masataka Michigami¹, Yuka Kanata¹, Chang Iou Ven¹, Ayana Oshima¹, Asako Yamaguchi-Nomoto¹, Takayoshi Kinoshita¹, Takatsugu Hirokawa^{2,3,4}, Ikuo Fujii¹ (¹Department of Biological Chemistry, Graduate School of Science, Osaka Metropolitan University, ²National Institute of Advanced Industrial Science and Technology (AIST), ³Division of Biomedical Science, University of Tsukuba, ⁴Transborder Medical Research Center, University of Tsukuba)

O-10 Cellular uptake of cell-penetrating peptides and encapsulation in extracellular vesicles

Shinya Nakai, Nami Matsuhiro, Ikuhiko Nakase (Graduate School of Science, Osaka Metropolitan University)

O-11 Biosynthetic studies on 7-hydroxytryptophan containing lasso peptide RES701-2

Yuka Yamaya¹, Takeshi Tsunoda², Yu Nakashima³, Chitose Maruyama⁴, Yoshimitsu Hamano⁴, Hiroyuki Morita³, Yasushi Ogasawara², Tohru Dairi² (¹Graduate School of Chemical Science and Engineering, Hokkaido University, ²Graduate School of Engineering, Hokkaido University, ³Institution of Natural Medicine, University of Toyama, ⁴Graduate School of Bioscience and Biotechnology, Fukui Prefectural University)

11:55–12:10 **Break**

12:10–13:25 **Lunch Break**

13:25–14:25 **Oral Presentations** (15 min talk, 4 min discussion, 1 min speaker exchange)

Session 4 (chairs: Ikuhiko Nakase, Toru Komatsu)

O-12 Local deformation of phase-separated giant liposome by photo-responsive peptide nanofiber

Yingbing Liang, Hiroshi Inaba, Kazunori Matsuura (Graduate School of Engineering, Tottori University)

O-13 Preparation of thermoresponsive biomaterials by conjugating short elastin-like peptides to proteins

Keitaro Suyama¹, Reina So², Iori Maeda³, Takeru Nose^{1,2} (¹Faculty of Arts and Science, Kyushu University, ²Department of Chemistry, Faculty and Graduate School of Science, Kyushu University, ³Department of Physics and Information Technology, Kyushu Institute of Technology)

O-14 Semi-synthesis of TDP-43 modified in N-terminal domain revealed effects of post-translational phosphorylation on self-association

Daisuke Sasaki, Mao Tenda, Youhei Sohma (Department of Medicinal Chemistry, School of Pharmaceutical Sciences, Wakayama Medical University)

14:25–14:40 **Break**

14:40–15:20 **Lectures of the Young Investigator Award**

(chair: Kazunori Matsuura)

Peptide design for modulating structures and functions of microtubules

Hiroshi Inaba (Graduate School of Engineering, Tottori University)

(chair: Katsumi Matsuzaki)

Biomembrane research utilizing functional peptides

Kenichi Kawano (Graduate School of Pharmaceutical Sciences, Kyoto University)

15:20–16:00 **Lecture of the Japanese Peptide Society Award**

(chair: Takeru Nose)

Functional regulation mechanisms in biological processes via oligomerization and complex formation

Kazuyasu Sakaguchi (Laboratory of Biological Chemistry, Department of Chemistry, Faculty of Science, Hokkaido University)

16:00–16:20 **Award Ceremony**

16:20–16:25 **Closing Remarks** (Hiroshi Murakami)