

# September 8, 2024

Time	No.	Title	Author (Affiliation)
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○=Indicates the presenter

## Awards Ceremony, Award Lectures (Society Award, Achievement Award, Technical Award)

### Room S 70th Anniversary Auditorium (9:00–11:30)

9:00		Opening Remarks by the SBJ President	
9:05		KSBB President's speech	
9:10		Distinguished members presentation	
9:20		Award presentation	
10:05	1A-Sa01	<b>〈Society Award〉</b> Pioneering research on metabolomics in the field of bioengineering .....○Eiichiro Fukusaki <sup>1,2</sup> ( <sup>1</sup> Grad. Sch. Eng., Osaka Univ., <sup>2</sup> OTRI, Osaka Univ.)	Chair: <b>Yoji Hata</b>
10:40	1A-Sa02	<b>〈Achievement Award〉</b> Research on fermentation technology for carbon recycling by anaerobic microorganisms .....○Yutaka Nakashimada (Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)	Chair: <b>Hideki Aoyagi</b>
11:10	1A-Sa03	<b>〈Technical Award〉</b> Investigation of probiotic potential of lactic acid bacteria isolated from traditional Mongolian dairy products and developments of novel functional fermented foods .....○Masahiko Takeshita <sup>1</sup> , Masahiko Kurokawa <sup>2</sup> , Masao Yamasaki <sup>3</sup> , Shuji Kanmura <sup>4</sup> , Shiro Takeda <sup>5</sup> ( <sup>1</sup> Minami Nihon Rakuno Kyodo, <sup>2</sup> Grad. Sch. Clinical Pharm., Kyushu Univ. Med. Sci., <sup>3</sup> Grad. Sch. Agric., Univ. Miyazaki., <sup>4</sup> Kagoshima Univ. Grad. Sch. Med. Dental Sci., <sup>5</sup> Sch. Vet. Med., Azabu Univ.)	Chair: <b>Satoshi Yoshida</b>

## Award Lectures (Encouragement Award [Eda Award, Saito Award, Terui Award])

### Room D West Lecture Bldg. 1, WL1-301 (Lecture Theater) (13:00–13:20)

13:00	1A-Dp01	<b>〈Encouragement Award (Eda Award)〉</b> Biochemical and genetic studies on the elucidation of the characterization of sake yeast .....○Shunichi Nakayama (Fac. Appl. Biosci., Tokyo Univ. Agric.)	Chair: <b>Takaomi Yasuhara</b>
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### Room I West Bldg. 2, W2-401 (13:00–13:20)

13:00	1A-Ip01	<b>〈Encouragement Award (Saito Award)〉</b> Microbial bionanomineralization: From fundamental insights to applied breakthroughs .....○Masayoshi Tanaka (Sch. Mater. Chem. Technol., Tokyo Tech)	Chair: <b>Kohsuke Honda</b>
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### Room A West Bldg. 9, Multi-Purpose Digital Hall (13:00–13:40)

- 13:00 1A-Ap01 <Encouragement Award (Terui Award)> Chair: Masamichi Kamihira  
Development of expression control and sensing platforms toward a yeast-based biomanufacturing and their applications  
..... ○Jun Ishii (EGBRC, Kobe Univ.)
- 13:20 1A-Ap02 <Encouragement Award (Terui Award)>  
Cell line development for biopharmaceutical production  
..... ○Noriko Yamano-Adachi<sup>1,2</sup> (<sup>1</sup> Grad. Sch. Eng., Osaka Univ., <sup>2</sup> OTRI, Osaka Univ.)

## Oral Presentations

### Room A West Bldg. 9, Multi-Purpose Digital Hall (14:42–17:06)

#### 【Biomedical Engineering; Cell and Tissue Engineering】

- 14:42 1Ap06 Investigation of the mechanism by which novel hyaluronan derivative suppress postoperative adhesions  
..... ○Harune Nakajima, Iku Moriya, Kazuaki Muramatsu (Grad. Sch. Sci. Eng. Tokyo Denki Univ.)
- 14:54 1Ap07 Regulation of cell migration based on plasma membrane cholesterol  
..... ○Kei Nishida, Masayasu Mie, Eiry Kobatake (Sch. Life Sci. Technol, Tokyo Tech)
- 15:06 1Ap08 Inhibitory effect of anti-Clic1 monoclonal antibody on invasion of cancer cells  
..... ○Kazuki Imai<sup>1,4</sup>, Samrat Mukherjee<sup>2,4</sup>, Masumi Iijima<sup>3</sup>, Ayana Yamagishi<sup>1,2,4</sup>,  
Chikashi Nakamura<sup>1,2,4</sup>  
(<sup>1</sup> Tokyo Univ. Agric. Technol., <sup>2</sup> Grad. Sch. Eng., Tokyo Univ. Agric. Technol.,  
<sup>3</sup> Fac. Appl. Biosci., Tokyo Univ. Agric., <sup>4</sup> AIST)
- 15:18 1Ap09 Predictive Control Systems for Antibody Drug Manufacturing Initiatives  
..... ○Ayaka Suetsuna, Hiroaki Yamanaka, Souichirou Shimoda (Yokogawa Electric Corp.)
- 15:30 1Ap10 Design strategy of alginate-based hydrogel as sustained drug release carrier for peritoneal dissemination of ovarian cancer  
..... ○I-Hsuan Yang<sup>1</sup>, Natsuko F. Inagaki<sup>1</sup>, Mifuyu Matsumoto<sup>1</sup>, Arvind Kumar Singh Chandel<sup>1</sup>,  
Osamu Hiraie<sup>2</sup>, Yutaka Osuga<sup>2</sup>, Taichi Ito<sup>1,2</sup>  
(<sup>1</sup> Grad. Sch. Eng., Univ. Tokyo, <sup>2</sup> Fac. Med., Univ. Tokyo)
- 15:42 Break
- 15:54 1Ap11 Evaluation of a progressive supranuclear palsy model cell population using single cell image analysis  
..... ○Yuta Taido<sup>1</sup>, Mizuna Chiku<sup>1</sup>, Koyo Tsujikawa<sup>2</sup>, Kenjiro Tanaka<sup>1</sup>,  
Kentaro Sahashi<sup>2</sup>, Masahisa Katsuno<sup>2,3</sup>, Ryuji Kato<sup>1,3</sup>  
(<sup>1</sup> Grad. Sch. Pharm. Sci., Nagoya Univ., <sup>2</sup> Grad. Sch. Med., Nagoya Univ.,  
<sup>3</sup> Inst. of Nano-Life-Syst., Nagoya Univ.)
- 16:06 1Ap12 Rapid functional evaluation of receptor-designed cells using image analysis  
..... ○Hiroyuki Goto<sup>1</sup>, Hiroaki Takeuchi<sup>1</sup>, Takumi Hisada<sup>1</sup>, Masahiro Kawahara<sup>3</sup>,  
Kenjiro Tanaka<sup>1</sup>, Ryuji Kato<sup>2</sup>  
(<sup>1</sup> Grad. Sch. Pharm. Sci., Nagoya Univ., <sup>2</sup> Inst. of Nano-Life-Syst., Nagoya Univ.,  
<sup>3</sup> National Institutes of Biomedical Innovation, Health and Nutrition)
- 16:18 1Ap13 Analysis of cell morphological information related to immunosuppressive potency of mesenchymal stem cells  
..... ○Taishi Kodama<sup>1</sup>, Kengo Momose<sup>1</sup>, Takumi Hisada<sup>1</sup>, Kenjiro Tanaka<sup>1</sup>, Ryuji Kato<sup>1,2</sup>  
(<sup>1</sup> Grad. Sch. Pharm. Sci., Nagoya Univ., <sup>2</sup> Inst. of Nano-Life-Syst., Nagoya Univ.)

- 16:30** 1Ap14 Development of an artificial intelligence system by deep learning of cancer vessel formation  
 .....○Tomoyasu Sugiyama<sup>1</sup>, Masayoshi Fujisawa<sup>2</sup>, Koichiro Doi<sup>1</sup>, Hiroyuki Kameda<sup>3</sup>,  
 Tomonari Kasai<sup>4</sup>, Toshiaki Ohara<sup>2</sup>  
 (<sup>1</sup>Sch. Biosci. Biotechnol., Tokyo Univ. Technol., <sup>2</sup>Grad. Sch. Med. Dent. Pharm. Sci., Okayama Univ.,  
<sup>3</sup>Sch. Comp. Sci., Tokyo Univ. Technol., <sup>4</sup>NTRC, Okayama Univ.)
- 16:42** 1Ap15 <Topics>  
 Evaluation of drug response of cancer organoids based on 3D imaging analysis  
 .....○Issei Kojima<sup>1</sup>, Haru Yamamoto<sup>2</sup>, Tatsuya Usui<sup>2</sup>, Daigo Azakami<sup>2</sup>,  
 Tsuyoshi Tanaka<sup>1</sup>, Tomoko Yoshino<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. Eng., Tokyo Univ. Agric. Technol., <sup>2</sup>Grad. Sch. Agric., Tokyo Univ. Agric. Technol.)
- 16:54** 1Ap16 Detection of circulating hybrid cells derived from patients with urothelial carcinoma and their correlation  
 with pathological conditions  
 .....○Ayaka Ishii<sup>1</sup>, Takeshi Yoshioka<sup>1</sup>, Takatsugu Okekawa<sup>2</sup>, Mayu Deki<sup>2</sup>,  
 Yu Nakamura<sup>2</sup>, Tsuyoshi Tanaka<sup>1</sup>, Tomoko Yoshino<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. Eng., Tokyo Univ. Agric. Technol., <sup>2</sup>Hosp., Kyorin Univ. Urol.)

## Room B West Bldg. 9, W9-324 (13:30–15:42)

### 【Biomedical Engineering; Cell and Tissue Engineering】

- 13:30** 1Bp01 Novel method for simple antibody modification on nanoparticle surfaces using Spytag-Spycatcher system  
 .....○Tsubasa Matsuzawa<sup>1</sup>, Mai Ishida<sup>2</sup>, Kouki Yamate<sup>1</sup>, Tasia Winda<sup>1</sup>,  
 Kahar Prihardi<sup>1</sup>, Yutaro Mori<sup>1</sup>, Chiaki Ogino<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. Eng. Kobe Univ., <sup>2</sup>Fac. Eng., Kobe Univ.)
- 13:42** 1Bp02 Development of titanium peroxide nanoparticles using food ingredients and investigation of their cell-  
 damaging effects  
 .....○Koki Yamate, Tsubasa Matsuzawa, Tasia Winda, Kahar Prihardi,  
 Yutaro Mori, Chiaki Ogino  
 (Grad. Sch. Eng. Kobe Univ.)
- 13:54** 1Bp03 Development of novel Ac-255 loaded gold nanoparticles for nuclear medicine treatment of cancer  
 .....○Ayaka Otsuka, Noriko Nakamura, Kenji Shimazoe, Seiichi Ohta (Grad. Sch. Eng., Univ. Tokyo)
- 14:06** 1Bp04 Exploration of size-tunable fluorescent conjugated polymer /superparamagnetic iron oxide composite  
 nanoparticle for sentinel lymph node detection  
 .....○Zhang Huanyu, Noriko Nakamura, Wataru Matsumoto, Motofumi Fushimi,  
 Masaki Sekino, Seiichi Ohta  
 (Grad. Sch. Eng., Univ. Tokyo)
- 14:18** 1Bp05 Construction of iPSC-derived Cardiac Muscle/Epicardial cell tissues using a microdevice  
 .....○Shunnosuke Nakamura, Hirokazu Akiyama, Yosuke Katayama, Kazunori Shimizu, Hiroyuki Honda  
 (Grad. Sch. Eng., Nagoya Univ.)
- 14:30** Break
- 14:42** 1Bp06 Preparation of phospholipid polymer-modified magnetic nanoparticles for cancer theranostics  
 .....○Takahiro Ono<sup>1</sup>, Masahiro Kaneko<sup>1</sup>, Masanobu Horie<sup>2</sup>, Akira Ito<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. Eng., Nagoya Univ., <sup>2</sup>Agency for Health, Safety and Environment, Kyoto Univ.)
- 14:54** 1Bp07 <Topics>  
 Development of bioartificial pancreas using phospholipid polymer-modified alginate gel  
 .....○Ryo Futatsubashi, Masahiro Kaneko, Akira Ito (Grad. Sch. Eng., Nagoya Univ.)

- 15:06 1Bp08 Analysis of the mechanism of growth arrest of human glioma cells on soft poly (vinylalcohol) gels  
 .....○Youta Noma, Hideki Mori, Masayuki Hara (Grad. Sch. Sci., Osaka Metro. Univ.)
- 15:18 1Bp09 Orthogonal control of intracellular signal transduction by two antigen-specific CARs  
 .....○Masahiro Kawahara <sup>1,2</sup>, Kyoko Nakajima <sup>1</sup>, Hideto Nakabayashi <sup>2</sup>  
 ( <sup>1</sup>NIBIOHN, <sup>2</sup>Grad. Sch. Eng., Univ. Tokyo)
- 15:30 1Bp10 Effects of viscoelastic changes in collagen gel caused by ultraviolet cross-linking on the growth of vascular endothelial cells  
 .....○Hideki Mori, Seiha Inoue, Masayuki Hara (Grad. Sch. Sci., Osaka Metro. Univ.)

## Room C West Lecture Bldg. 1, WL1-201 (13:30–17:18)

### 【Taxonomy, Phylogenetics; Genetic Engineering】

- 13:30 1Cp01 Transcriptome analysis for improving the efficiency of establishing in vitro cultured chicken primordial germ cells  
 .....○Yuya Okuzaki, Ken-ichi Nishijima (Grad. Sch. Bioagric., Sci., Nagoya Univ.)
- 13:42 1Cp02 Constructing pangenome-graphs of Suruga-bay phages using single-virus genomic  
 .....○Ryota Wagatsuma <sup>1,2</sup>, Yohei Nishikawa <sup>2,3</sup>, Masahito Hosokawa <sup>1,2,3,4</sup>, Katsuhiko Mineta <sup>3,5</sup>,  
 Akinobu Kimura <sup>1</sup>, Yuto Hiraki <sup>1,2</sup>, Kana Jitsuno <sup>1</sup>, Haruko Takeyama <sup>1,2,3,4</sup>  
 ( <sup>1</sup>Grad. Sch. Adv. Sci. Eng., Waseda Univ., <sup>2</sup>CBBD-OIL, AIST-Waseda Univ.,  
<sup>3</sup>Res. Org. Nano Life Innov., Waseda Univ.,  
<sup>4</sup>Inst. Adv. Res. Biosyst. Dyn., Waseda Res. Inst. Sci. Eng., Waseda Univ., <sup>5</sup>MaOI. Inst.)
- 13:54 1Cp03 Simplifying the construction process of the biological containment strategy based on the design of phosphorus metabolic pathway  
 .....○Naoki Momokawa, Takenori Ishida, Takeshi Ikeda, Hisakage Funabashi,  
 Akio Kuroda, Ryuichi Hirota  
 (Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)
- 14:06 1Cp04 Development of a measurement system for environmental phosphite using phosphite dehydrogenase  
 .....○Yusuke Nishigaki, Gamal Nasser Abdel-Hady, Takenori Ishida,  
 Takeshi Ikeda, Hisakage Funabashi, Akio Kuroda, Ryuichi Hirota  
 (Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)
- 14:18 1Cp05 <Topics>  
 Enhancing the phosphite-dependent biological containment system through modification of substrate specificity of a phosphorous transporter  
 .....○Akari Miwa, Naoki Momokawa, Takenori Ishida, Takeshi Ikeda,  
 Hisakage Funabashi, Akio Kuroda, Ryuichi Hirota  
 (Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)
- 14:30 Break
- 14:42 1Cp06 Activation of secondary metabolites production in the evyactin-producing strain *Photorhabdus noenieputensis*  
 .....○Yu Imai (Inst. Biomed. Sci., Shinshu Univ.)
- 14:54 1Cp07 Development of the low-temperature inducible system in *Escherichia coli*  
 ..... Tzu-Han Lin, Shu-Yun Cheng, Yi-Fen Lin, ○Po-Ting Chen  
 (Dept. of Biotechnol. and Food Technol., Southern Taiwan Univ. of Sci. and Technol.)

- 15:06** 1Cp08 Acceleration of sugar alcohol assimilation by the overexpression of the newly identified transporter gene in the yeast *Kluyveromyces marxianus*  
 ..... Hitomi Nakamura<sup>1</sup>, Satoshi Ebe<sup>1</sup>, Mitsunari Matsuda<sup>2</sup>, Tomoya Kagawa<sup>1</sup>,  
 Yuki Terauchi<sup>3</sup>, Rinji Akada<sup>1,3</sup>, ○Hisashi Hoshida<sup>1,3</sup>  
 (<sup>1</sup> Grad. Sch. Sci. Technol. Innov., <sup>2</sup> Fac. Eng., Yamaguchi Univ., <sup>3</sup> YU-RC TMR)
- 15:18** 1Cp09 Long-term effects of overexpression of the endogenous toxin-antitoxin system on growth of *Escherichia coli*  
 ..... ○Keisuke Wada, Shun Sato, Tokuma Fukuoka (AIST)
- 15:30** 1Cp10 Role of c-di-AMP in spore-forming lactic acid bacteria *Bacillus coagulans* for efficient lactic acid production  
 ..... ○Akio Suizu, Naoki Fujii, Kazuma Ono, Shinji Iijima, Hidenori Kaneoka  
 (Fac. Eng., Aichi Inst. Technol.)
- 15:42** Break
- 15:54** 1Cp11 Development of a stable plasmid maintenance method for *Bacillus subtilis* without using antibiotics  
 ..... ○Rei Odaka, Takumi Iwasaki, Hirohumi Horiguchi (Godo Shusei Co., Ltd.)
- 16:06** 1Cp12 Recombinant gene expression of the marine acidophilic sulfur-oxidizing bacterium *Acidithiobacillus* sp. strain SH  
 ..... ○Tadayoshi Kanao<sup>1</sup>, Rika Nishiura<sup>2</sup>, Hinano Kamesawa<sup>2</sup>, Michiko Nemoto<sup>1</sup>, Takashi Tamura<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Environ. Life Sci., Okayama Univ., <sup>2</sup> Fac. Agric., Okayama Univ.)
- 16:18** 1Cp13 Agrobacterium-mediated transformation of plants and yeast using endophyte Agrobacterium strains derived from wheat  
 ..... ○Katsunori Suzuki<sup>1</sup>, Kazuya Kiyokawa<sup>2</sup>, Eri Tuchiya<sup>3</sup>, Kazuhide Rikiishi<sup>3</sup>  
 (<sup>1</sup> Grad. Sch. Integr. Sci. Life, Hiroshima Univ., <sup>2</sup> Genome Edit Innovat Center, Hiroshima Univ.,  
<sup>3</sup> IPSR., Okayama Univ.)
- 16:30** 1Cp14 Establishment of efficient transformation technique in marine green alga *Parachlorella* sp. NKG400014  
 ..... ○Kento Sagawa, Ryota Kumakubo, Tomoko Yoshino, Tsuyoshi Tanaka  
 (Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)
- 16:42** 1Cp15 Establishment of Markerless Transformation Method for *Synechococcus* sp. PCC 7002  
 ..... ○Ayaka Tsuji<sup>1</sup>, Kosuke Inabe<sup>1</sup>, Ryota Hidese<sup>2</sup>, Yuichi Kato<sup>1</sup>,  
 Akihiko Kondo<sup>1,2,3</sup>, Tomohisa Hasunuma<sup>1,2</sup>  
 (<sup>1</sup> EGBRC, Kobe Univ., <sup>2</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ., <sup>3</sup> Fac. Eng., Kobe Univ.)
- 16:54** 1Cp16 Construction of gene disruptant of microorganism involved in flavonoid metabolism  
 ..... ○Shunsuke Tabayashi<sup>1</sup>, Yoshiteru Hashimoto<sup>1,2</sup>, Takuto Kumano<sup>1,2</sup>, Michihiko Kobayashi<sup>1,2</sup>  
 (<sup>1</sup> Grad. Sch. Life Environ. Sci., Univ. Tsukuba, <sup>2</sup> MiCS, Univ. Tsukuba)
- 17:06** 1Cp17 iGEM: A platform encouraging youth research Orientation in synthetic biology community  
 ..... ○Yoshihito Imagawa<sup>1</sup>, Keisuke Nishimoto<sup>2</sup>, Nariaki Nishimura<sup>3</sup>, Kohei Takeuchi<sup>4</sup>, Maisa Suzuki<sup>5</sup>  
 (<sup>1</sup> Fac. Eng., Gifu Univ., <sup>2</sup> N High School, <sup>3</sup> Fac. Arts. Sci., Kyushu Univ., <sup>4</sup> Fac. Eng., Hokkaido Univ.,  
<sup>5</sup> Sch. Life Sci., Tokyo Univ. Pharm. Life Sci.)

## Room D West Lecture Bldg. 1, WL1-301 (Lecture Theater) (13:30–17:06)

### 【Metabolic Engineering】

- 13:30** 1Dp01 *E. coli* glutathione production 1: Glutathione production by *Escherichia coli* without cysteine supplementation  
 .....○Misato Matsui<sup>1</sup>, Hiroki Mori<sup>1</sup>, Tomohisa Hasunuma<sup>2,3,4</sup>, Hiroshi Shimizu<sup>5</sup>,  
 Naoaki Taoka<sup>1</sup>, Shingo Kobayashi<sup>1</sup>  
 (<sup>1</sup>Kaneka Corp., <sup>2</sup>EGBRC, Kobe Univ., <sup>3</sup>Grad. Sch. Sci. Technol. Innov., Kobe Univ., <sup>4</sup>CSRS, RIKENS,  
<sup>5</sup>Grad. Sch. IST, Osaka Univ.)
- 13:42** 1Dp02 *E. coli* glutathione production 2: Evaluation metabolic fluxes based on <sup>13</sup>C labeling during glutathione production phase  
 .....○Yoshihiro Toya<sup>1</sup>, Hiroki Mori<sup>2</sup>, Sayaka Kitamura<sup>1</sup>, Shingo Kobayashi<sup>2</sup>,  
 Tomohisa Hasunuma<sup>3,4,5</sup>, Hiroshi Shimizu<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. IST, Osaka Univ., <sup>2</sup>Kaneka Corp., <sup>3</sup>EGBRC, Kobe Univ.,  
<sup>4</sup>Grad. Sch. Sci. Technol. Innov., Kobe Univ., <sup>5</sup>CSRS, RIKENS)
- 13:54** 1Dp03 *E. coli* glutathione production 3: Identification of rate-limiting reaction during glutathione production via metabolome analysis  
 .....○Takahiro Bamba<sup>1</sup>, Hiroki Mori<sup>2</sup>, Yoshimi Hori<sup>1</sup>, Shingo Kobayashi<sup>2</sup>,  
 Hiroshi Shimizu<sup>3</sup>, Tomohisa Hasunuma<sup>1,4,5</sup>  
 (<sup>1</sup>EGBRC, Kobe Univ., <sup>2</sup>Kaneka Corp., <sup>3</sup>Grad. Sch. IST, Osaka Univ.,  
<sup>4</sup>Grad. Sch. Sci. Technol. Innov., Kobe Univ., <sup>5</sup>CSRS, RIKENS)
- 14:06** 1Dp04 1,3-Propanediol production in *Escherichia coli* by metabolic flux control using light as input signals  
 .....○Suwa Kawanishi, Shota Sakurai, Masashi Tsukamoto, Hiroshi Shimizu, Yoshihiro Toya  
 (Grad. Sch. IST, Osaka Univ.)
- 14:18** 1Dp05 Development of a photoswitchable bio-production platform  
 .....○Saya Kawata<sup>1</sup>, Takahiro Otabe<sup>1,2</sup>, Daisuke Koma<sup>3</sup>, Hiroyuki Ohashi<sup>3</sup>,  
 Hayato Yamanaka<sup>3</sup>, Moritoshi Sato<sup>1,2</sup>  
 (<sup>1</sup>Grad. Sch. Arts Sci., Univ. Tokyo, <sup>2</sup>KISTEC, <sup>3</sup>ORIST)
- 14:30** Break
- 14:42** 1Dp06 Retinal production by engineered *Escherichia coli*  
 .....○Sae Amemiya<sup>1</sup>, Yoko Hirono<sup>2</sup>, Fumio Matsuda<sup>3</sup>, Yoshihiro Toya<sup>3</sup>,  
 Jun Ishii<sup>4</sup>, Kiyotaka Hara<sup>1,2</sup>  
 (<sup>1</sup>Grad. Sch. Integr. Pharm. Nutr. Sci., Univ. Shizuoka, <sup>2</sup>Sch. Food Nutr. Sci., Univ. Shizuoka.,  
<sup>3</sup>Grad. Sch. IST, Osaka Univ., <sup>4</sup>EGBRC, Kobe Univ.)
- 14:54** 1Dp07 *In vitro* verification of pigment formation from 4-hydroxyphenylacetaldehyde  
 .....Ning Shen<sup>1</sup>, ○Yasuharu Satoh<sup>2</sup>, Daisuke Koma<sup>3</sup>, Hiroyuki Ohashi<sup>3</sup>,  
 Yasushi Ogasawara<sup>2</sup>, Tohru Dairi<sup>2</sup>  
 (<sup>1</sup>Grad. Sch. Chem. Sci. Eng., Hokkaido Univ., <sup>2</sup>Grad. Sch. Eng., Hokkaido Univ., <sup>3</sup>ORIST)
- 15:06** 1Dp08 <sup>13</sup>C-glucose labeling method for metabolic flux analysis of non-oxidative glycolysis in *Escherichia coli*  
 .....○Kenta Miyoshi, Tatsumi Imada, Haruka Teraki, Teppei Niide,  
 Yoshihiro Toya, Hiroshi Shimizu  
 (Grad. Sch. IST, Osaka Univ.)
- 15:18** 1Dp09 Evaluation of the reverse glyoxylate shunt in engineered *Escherichia coli* strains based on <sup>13</sup>C labeling experiments  
 .....○Haruka Teraki, Tatsumi Imada, Kenta Miyoshi, Teppei Niide,  
 Hiroshi Shimizu, Yoshihiro Toya  
 (Grad. Sch. IST, Osaka Univ.)

- 15:30** 1Dp10 Metabolic flux regulation by modifying ribosome-binding site sequences in *Escherichia coli* for efficient substance production  
 .....○Tomoki Shimotani, Shogo Sawada, Yoshihiro Toya, Hiroshi Shimizu (Grad. Sch. IST, Osaka Univ.)
- 15:42** Break
- 15:54** 1Dp11 Establishing a basis for producing meroterpenoids in *Escherichia coli* by utilizing metabolic engineering  
 .....○Itsuki Tomita<sup>1</sup>, Takahiro Bamba<sup>2</sup>, Akihiko Kondo<sup>1,2,3</sup>, Tomohisa Hasunuma<sup>1,2,3</sup>  
 (<sup>1</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ., <sup>2</sup>EGBRC, Kobe Univ., <sup>3</sup> CSRS, RIKENS)
- 16:06** 1Dp12 Induction conditions that promote the effect of glycerol on protein production in *Escherichia coli*  
 .....○Hajime Saito<sup>1</sup>, Yoshihiro Ojima<sup>1</sup>, Shintaro Miyuki<sup>2</sup>, Koichi Fukunaga<sup>2</sup>,  
 Terumichi Tsuboi<sup>2</sup>, Masayuki Azuma<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Eng., Osaka Metro. Univ., <sup>2</sup> Sakamoto Yakuin Kogyo Co., Ltd.)
- 16:18** 1Dp13 Analysis of the effect of the formate degradation pathway on formatotrophic *Escherichia coli*  
 .....○Tatsumi Imada, Keitaro Tatsumi, Kinuka Isshiki, Hiroshi Shimizu, Yoshihiro Toya  
 (Grad. Sch. IST, Osaka Univ.)
- 16:30** 1Dp14 Adaptive laboratory evolution of *Escherichia coli* mutants lacking the enzymes involved in the maintenance of energy and redox balance  
 .....○Kotaro Yamagami<sup>1</sup>, Hazuki Kotani<sup>2</sup>, Satoru Fukiya<sup>1</sup>, Chikara Furusawa<sup>2,3</sup>, Tomoya Maeda<sup>1,2</sup>  
 (<sup>1</sup> Grad. Sch. Agric., Hokkaido Univ., <sup>2</sup> BDR, RIKEN, <sup>3</sup> Grad. Sch. Sci., Univ. Tokyo)
- 16:42** 1Dp15 Adaptive laboratory evolution of *Corynebacterium glutamicum* lacking the enzymes involved in the oxidation of NADH  
 .....○Shogo Nakabori<sup>1</sup>, Hazuki Kotani<sup>2</sup>, Satoru Fukiya<sup>1</sup>, Chikara Furusawa<sup>2,3</sup>,  
 Bott Michael<sup>4</sup>, Tomoya Maeda<sup>1,2</sup>  
 (<sup>1</sup> Grad. Sch. Agric., Hokkaido Univ., <sup>2</sup> BDR, RIKEN, <sup>3</sup> Grad. Sch. Sci., Univ. Tokyo,  
<sup>4</sup> Forschungszentrum Juelich)
- 16:54** 1Dp16 Metabolic engineering of *Corynebacterium glutamicum* for retinal production  
 .....○Wenhui Hao<sup>1</sup>, Yoko Hirono<sup>2</sup>, Kiyotaka Hara<sup>2</sup>, Yota Tsuge<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Front. Sci. Init., Kanazawa Univ., <sup>2</sup> Sch. Food Nutr. Sci., Univ. Shizuoka.)

## Room E West Lecture Bldg. 1, WL1-401 (13:30–17:06)

### 【Fermentation Physiology, Fermentation Technology】

- 13:30** 1Ep01 Differences between hyphae-aggregated type and hyphae-dispersed type of *Aspergillus oryzae* based on observations of cell organelles  
 .....○Tomohiro Suzuki<sup>1</sup>, Fahmi Baihaqqi<sup>1</sup>, Kotone Mastumoto<sup>1</sup>, Sho Motosako<sup>1</sup>,  
 Satoshi Wakai<sup>2,3</sup>, Yutaro Mori<sup>1</sup>, Prihardi Kahar<sup>1</sup>, Chiaki Ogino<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Eng, Kobe Univ., <sup>2</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ., <sup>3</sup> JAMSTEC)
- 13:42** 1Ep02 Influence of fermentation parameter to the production of isoprimeverose-producing enzyme in genetically engineered *Aspergillus oryzae*  
 .....○Fahmi Baihaqqi<sup>1</sup>, Satoshi Wakai<sup>2,3</sup>, Tomohiro Suzuki<sup>1</sup>, Prihardi Kahar<sup>1</sup>, Chiaki Ogino<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Eng, Kobe Univ., <sup>2</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ., <sup>3</sup> JAMSTEC)
- 13:54** 1Ep03 Culture characteristics of a filamentous fungus *Aspergillus oryzae* on different growth substrates including Sorghum juice  
 .....○Sho Motosako<sup>1</sup>, Kotone Matsumoto<sup>1</sup>, Tomohiro Suzuki<sup>1</sup>, Satoshi Wakai<sup>2,4</sup>,  
 Kahar Prihardi<sup>1</sup>, Yutaro Mori<sup>1</sup>, Takashi Satsuka<sup>3</sup>, Chiaki Ogino<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Eng, Kobe Univ., <sup>2</sup> JAMSTEC, <sup>3</sup> Grad. Sch. Bioagric., Sci., Nagoya Univ.,  
<sup>4</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ.)

- 14:06** 1Ep04 Regulation of methylotrophic metabolism against oxygen conditions and the role of RTG pathway in the C<sub>1</sub> yeast *Komagataella phaffii*  
 .....○Shunta Goto<sup>1</sup>, Hao-Liang Cai<sup>2</sup>, Shunsuke Hanaki<sup>1</sup>, Junzhang Zhu<sup>2</sup>,  
 Masaya Shimada<sup>1,2,3</sup>, Tomoyuki Nakagawa<sup>1,2,3</sup>  
 (<sup>1</sup> Grad. Sch. Nat. Sci. Tech., Gifu Univ., <sup>2</sup> United Grad. Sch. Agric. Sci., Gifu Univ.,  
<sup>3</sup> Fac. Appl. Biol. Sci., Gifu Univ.)
- 14:18** 1Ep05 Accumulation of formate during methanol growth of the C<sub>1</sub> yeast *Komagataella phaffii* for application to *Methanol-based biorefinery*  
 .....○Junzhang Zhu<sup>1</sup>, Hao-Liang Cai<sup>1</sup>, Shunta Goto<sup>2</sup>, Masaya Shimada<sup>1,2,3</sup>, Hiroya Yurimoto<sup>4</sup>,  
 Yasuyoshi Sakai<sup>4</sup>, Takehiko Yoko-o<sup>5</sup>, Yasunori Chiba<sup>5</sup>, Tomoyuki Nakagawa<sup>1,2,3</sup>  
 (<sup>1</sup> United Grad. Sch. Agric. Sci., Gifu Univ., <sup>2</sup> Grad. Sch. Nat. Sci. Tech., Gifu Univ.,  
<sup>3</sup> Fac. Appl. Biol. Sci., Gifu Univ., <sup>4</sup> Grad. Sch. Agric., Kyoto Univ., <sup>5</sup> AIST)
- 14:30** Break
- 14:42** 1Ep06 Enhancement of Sulfur Metabolism in Sake Yeast by Modification of Met4  
 .....○Shogo Kakoi, Hiroyuki Senjyu, Takuya Asai, Takahiro Akashi (Hakutsuru Sake Brewing Co., Ltd.)
- 14:54** 1Ep07 Comparison of metabolic fluxes between brewing yeasts  
 .....○Takuma Uehara<sup>1</sup>, Taku Ota<sup>1</sup>, Satoshi Yoshida<sup>1</sup>, Fumio Matsuda<sup>2</sup>, Kentaro Iwasaki<sup>1</sup>  
 (<sup>1</sup> Kirin Holdings Co., Ltd., <sup>2</sup> Grad. Sch. IST, Osaka Univ.)
- 15:06** 1Ep08 Degradation and assimilation of Alcohol Maleate by esterase displaying yeast  
 .....○Saki Maehashi, Kahar Prihardi, Yutaro Mori, Chiaki Ogino (Grad. Sch. Eng, Kobe Univ.)
- 15:18** 1Ep09 Improvement of the lethal concentration of hydrogen peroxide method and investigation of methods to enhance stress tolerance for breeding baker's yeast strains  
 .....○Yuki Takemura<sup>1</sup>, Nanako Tsuyuki<sup>1</sup>, Susumu Kokubo<sup>2</sup>, Hideki Yamamura<sup>2</sup>, Youji Nakagawa<sup>2</sup>  
 (<sup>1</sup> Integr. Grad. Sch. Med. Eng. Agric. Sci, Univ. Yamanashi, <sup>2</sup> Grad. Fac. Interdisc. Res., Univ. Yamanashi)
- 15:30** 1Ep10 Isolation and characterization of spontaneous stress-tolerant mutants of *Saccharomyces cerevisiae* using high sugar concentration plate media  
 .....○Kohei Saito<sup>1</sup>, Yukimi Noda<sup>2</sup>, Susumu Kokubo<sup>3</sup>, Masayuki Hayakawa<sup>4</sup>,  
 Hideki Yamamura<sup>3</sup>, Youji Nakagawa<sup>3</sup>  
 (<sup>1</sup> Integr. Grad. Sch. Med. Eng. Agric. Sci, Univ. Yamanashi, <sup>2</sup> Fac. Life Sci. Biotechnol., Univ. Yamanashi,  
<sup>3</sup> Grad. Fac. Interdisc. Res., Univ. Yamanashi, <sup>4</sup> Yamanashi Prefectur. Univ.)
- 15:42** Break
- 15:54** 1Ep11 Physiological role and function of transcription factor Stb5p in multi-stress response of the budding yeast *Saccharomyces cerevisiae*  
 .....○Yuichiro Ikagawa<sup>1</sup>, Yurika Hayashi<sup>2</sup>, Masaya Shimada<sup>1,2,3</sup>, Tomoyuki Nakagawa<sup>1,2,3</sup>  
 (<sup>1</sup> United Grad. Sch. Agric. Sci., Gifu Univ., <sup>2</sup> Grad. Sch. Nat. Sci. Tech., Gifu Univ.,  
<sup>3</sup> Fac. Appl. Biol. Sci., Gifu Univ.)
- 16:06** 1Ep12 Optimizing cultivation medium of *Rhodotorula toruloides* NBRC 0559 for improvement of lipid yield  
 .....○Min Sung Kim<sup>1</sup>, Hiroyuki Kajiura<sup>2,3</sup>, Ryo Misaki<sup>2,3</sup>, Kazuhito Fujiyama<sup>2,3</sup>  
 (<sup>1</sup> Grad. Sch. Eng., Osaka Univ., <sup>2</sup> ICBiotech, Osaka Univ., <sup>3</sup> OTRI, Osaka Univ.)
- 16:18** 1Ep13 Secretion of beta-glucan and mannoproteins by *Saccharomyces cerevisiae* cell wall mutants  
 .....○Wanlin Han, Miyu Yamamoto, Yoshihiro Ojima, Masayuki Azuma  
 (Grad. Sch. Eng., Osaka Metro. Univ.)
- 16:30** 1Ep14 Production of baker's yeast by co-cultivation of yeast and lactic acid bacteria and its characterization  
 .....○Karin Komai, Kazuhiro Hamada, Yoshihiro Ojima, Masayuki Azuma  
 (Grad. Sch. Eng., Osaka Metro. Univ.)
- 16:42** 1Ep15 Screening and performance evaluation of natural yeast  
 .....○Misaki Nakajima<sup>1</sup>, Hironobu Otsuchi<sup>1</sup>, Kairi Takeuchi<sup>2</sup>, Hirohumi Aritani<sup>2</sup>, Yuji Hatada<sup>2</sup>  
 (<sup>1</sup> Saitama Inst. of Tech., <sup>2</sup> S.I.T.)



- 16:54 1Ep16 Construction of transformation system in *Moniliella megachiliensis*  
 .....○Shinkuro Kimura<sup>1</sup>, Taisuke Watanabe<sup>1,2</sup>, Takafumi Kasumi<sup>1,2</sup>, Jun Ogihara<sup>1,2</sup>  
 (1 Dept. Grad. Sch. Biores. Sci., Nihon Univ., 2 Coll. Bioresour. Sci., Nihon Univ.)

## Room F West Bldg. 3, W3-301 (13:30–17:06)

### 【Enzymology, Enzyme】

- 13:30 1Fp01 Functional analysis of feedback inhibition-insensitive variants of *N*-acetyl glutamate kinase found in Sake yeast mutants with ornithine overproduction  
 .....○Masataka Ohashi<sup>1</sup>, Shota Isogai<sup>2</sup>, Hiroshi Takagi<sup>2</sup>  
 (1 Nara Pref. Inst. Ind. Dev., 2 Institute for Research Initiatives. NAIST)
- 13:42 1Fp02 Structure-function relationship of beta-1,3-xylanases *BcXyn26A* and *BcXyn26B* from human gut bacterium *Bacteroides cellulosilyticus*  
 .....○Kotone Yamamoto, Sanae Hori, Fumiyoshi Okazaki (Grad. Sch. Bioresour., Mie Univ.)
- 13:54 1Fp03 Difference in activities due to slight structural differences in sarcosine oxidases  
 .....○Yuqi Zhang<sup>1</sup>, Yoshitaka Nakajima<sup>1</sup>, Fuka Toyama<sup>1</sup>, Tsutomu Nakamura<sup>2</sup>,  
 Tomoki Himiyama<sup>2</sup>, Yoshiaki Nishiya<sup>1</sup>  
 (1 Grad. Sch. Sci. Eng., Setsunan Univ., 2 Biomed. Res. Inst., AIST)
- 14:06 1Fp04 Increased reverse reaction rate of a citrate synthase by reduced interaction with substrate  
 .....○Akihiro Onishi, Yoshiaki Nishiya (Grad. Sch. Sci. Eng., Setsunan Univ.)
- 14:18 1Fp05 Improvement of the substrate entrance of glycine oxidase  
 .....○Hitomi Taneda, Yoshiaki Nishiya (Grad. Sch. Sci. Eng., Setsunan Univ.)
- 14:30 Break
- 14:42 1Fp06 Characterization and expression condition of L-ribulose 3-epimerase A and B from *Shinella zoogloeoides* strain NN6  
 .....○Koyuki Shinoda<sup>1</sup>, Ami Shimazu<sup>1</sup>, Konami Takeshima<sup>1</sup>, Kenji Morimoto<sup>2,3</sup>  
 (1 Grad. Sch. Agric., Kagawa Univ., 2 Fac. Agric., Kagawa Univ., 3 RSRC, Kagawa Univ.)
- 14:54 1Fp07 Identification of fructose-1,6-bisphosphatase in Asgard archaea  
 .....○Takaaki Sato<sup>1,2</sup>, Yusuke Nakagawa<sup>1</sup>, Haruyuki Atomi<sup>1,2</sup>  
 (1 Grad. Sch. Eng., Kyoto Univ., 2 Integr. Res. Center for Carbon Negative Sci., Kyoto Univ.)
- 15:06 1Fp08 Automated docking-based selection of a carboxylesterase to deprotect novel sialic acid analogues as anti-viral agents  
 .....○Niranjheeni Alagappan<sup>1</sup>, Hiromasa Kiyota<sup>2</sup>, Christopher J. Vavricka<sup>1</sup>  
 (1 Dept. Biotechnol. Life Sci., Tokyo Univ. Agric. Technol., 2 Grad. Sch. Environ. Life Sci., Okayama Univ.)
- 15:18 1Fp09 Identification of amino acid residues essential for the activity of the beta-agarase derived from *Cellvibrio* sp. WU-0601 by site-directed mutations  
 .....○Kaito Tamura<sup>1</sup>, Yoshitaka Ishii<sup>2</sup>, Kohtaro Kirimura<sup>1</sup>  
 (1 Grad. Sch. Adv. Sci. Eng., Waseda Univ., 2 Res. Inst. Sci. Eng, Waseda Univ.)
- 15:30 1Fp10 Development of an evaluation system for cyanide-insensitive respiration inhibitors using a filamentous fungus *Aspergillus tubingensis* WU-2223L  
 .....○Saki Kaizoji<sup>1</sup>, Isato Yoshioka<sup>2,3</sup>, Takahiro Matsuura<sup>1</sup>, Sari Wakimoto<sup>1</sup>, Kohtaro Kirimura<sup>1,2</sup>  
 (1 Dept. Appl. Chem., Fac. Sci. Eng., Waseda Univ., 2 Waseda Res. Inst. Sci. Eng., 3 MMRC, Chiba Univ.)
- 15:42 Break
- 15:54 1Fp11 Prediction of specific chaperone dependence of bacterial lipase subfamilies I.1 and I.2  
 .....○Takahiro Hioki, Akihito Kawahara, Shingo Koyama (Kao Corp.)

- 16:06** 1Fp12 Insights from the temperature and pH characteristics of the major cortex-lytic enzyme and germination receptors of *Bacillus subtilis* spores  
 ..... ○Jin Sakamoto<sup>1,2</sup>, Tetsuaki Tsuchido<sup>1</sup>, Ryoko Asada<sup>1,3</sup>  
 (1 Microorganisms Cntr. Res. Ctr., Osaka Metro. Univ., 2 Fac. Chem. Mater. Bioeng., Kansai Univ.,  
 3 Fac. Eng., Osaka Inst. Technol.)
- 16:18** 1Fp13 Analysis of DegQ-like cell surface protease in *Corynebacterium glutamicum*  
 ..... ○Epo Nakano, Masafumi Hagiwara, Noritaka Iwai, Masaaki Wachi  
 (Sch. Life Sci. Technol, Tokyo Tech)
- 16:30** 1Fp14 Methylation of outer membrane proteins in Gram-negative bacteria  
 ..... ○Shori Inoue, Shogo Yoshimoto, Katsutoshi Hori (Grad. Sch. Eng., Nagoya Univ.)
- 16:42** 1Fp15 Engineered alcohol dehydrogenase from *Geotrichum candidum* NBRC 4597 for reduction of bulky-bulky ketones  
 ..... ○Zhongyao Tang, Yuuki Takagi, Afifa Ayu Koesoema, Tomoko Matsuda  
 (Sch. Life Sci. Technol, Tokyo Tech)
- 16:54** 1Fp16 Substrate Promiscuity of *Thermoplasma acidophilum* Malic Enzyme for Carboxylation  
 ..... ○Yuri Oku, Haruto Suzuki, Tomoko Matsuda (Sch. Life Sci. Technol, Tokyo Tech)

## Room G West Bldg. 3, W3-201 (13:30–16:54)

### 【Enzymology, Enzyme】

- 13:30** 1Gp01 Mechanistic analysis of the enzymatic synthesis of polyhydroxyalkanoates with block sequence  
 ..... ○Kengo Yanagawa<sup>1</sup>, Hiroya Tomita<sup>2</sup>, Shin-ichi Hachisuka<sup>2</sup>,  
 Hiroshi Kikukawa<sup>2</sup>, Ken-ichiro Matsumoto<sup>2</sup>  
 (1 Grad. Sch. Chem. Sci. Eng., Hokkaido Univ., 2 Grad. Sch. Eng., Hokkaido Univ.)
- 13:42** 1Gp02 *In vitro* analysis of 6-hydroxyhexanoate-based polymer synthesis using artificial PHA synthase  
 ..... ○Kazuki Yamamoto<sup>1</sup>, Seiya Tadika<sup>1</sup>, Yuka Hozumi<sup>1</sup>, Sinichi Hachisuka<sup>2</sup>,  
 Hiroshi Kikukawa<sup>2</sup>, Kenichiro Matsumoto<sup>2</sup>  
 (1 Grad. Sch. Chem. Sci. Eng., Hokkaido Univ., 2 Grad. Sch. Eng., Hokkaido Univ.)
- 13:54** 1Gp03 Characterization of a novel D-arabinose isomerase from *Cellulosimicrobium* sp. 5C  
 ..... ○Marin Tokumoto<sup>1</sup>, Kengo Matsumoto<sup>1</sup>, Kenji Morimoto<sup>1,2</sup>  
 (1 Fac. Agric., Kagawa Univ., 2 RSRC, Kagawa Univ.)
- 14:06** 1Gp04 Adaptive laboratory evolution of *Ralstonia* sp. phosphite dehydrogenase (PtxD): Isolation and biochemical characterization of a nitrate resistant PtxD  
 ..... ○Gamal Nasser Abdel-Hady<sup>1,2</sup>, Linh Thi Thuy Coa<sup>1</sup>, Takeshi Ikeda<sup>1</sup>, Takenori Ishida<sup>1</sup>,  
 Hisakage Funabashi<sup>1</sup>, Akio Kuroda<sup>1</sup>, Ryuichi Hirota<sup>1</sup>  
 (1 Unit Biotechnol., Div. Biol. Life Sci., Grad. Sch. Integr. Sci. for Life, Hiroshima Univ.,  
 2 Dept. Genet., Fac. Agric., Minia Univ., Egypt)
- 14:18** 1Gp05 Bio-ethylene production from CO<sub>2</sub> by engineered cyanobacteria  
 ..... ○Sadanari Jindou<sup>1</sup>, Shaohua Chen<sup>3</sup>, Hayata Karino<sup>2</sup>, Akane Matsuoka<sup>2</sup>,  
 Chihiro Tokuda<sup>2</sup>, Kazuya Takeuchi<sup>2</sup>, Shouma Tatematsu<sup>2</sup>, Hiroto Tamura<sup>2</sup>  
 (1 Meijo Univ. Sci. Tech., 2 Meijo Univ. Agri., 3 Evolution 2 Corp.)
- 14:30** Break
- 14:42** 1Gp06 Application of an alpha-glucosyl transfer enzyme XgtA derived from *Xanthomonas campestris* WU-9701 to enzymatic production of alpha-glucosylglycerol  
 ..... ○Wei Cao<sup>1</sup>, Kanon Suzuki<sup>1</sup>, Masaki Sakano<sup>1</sup>, Yoshitaka Ishii<sup>2</sup>, Kohtaro Kirimura<sup>1,2</sup>  
 (1 Dept. Appl. Chem., Fac. Sci. Eng., Waseda Univ., 2 Waseda Res. Inst. Sci. Eng.)

- 14:54 1Gp07 Development of analytical method for alpha-glucosylglycerol isomers synthesized by glucosyl transfer enzyme XgtA derived from *Xanthomonas campestris* WU-9701, and characterization of its main product  
 ..... ○Kanon Suzuki<sup>1</sup>, Wei Cao<sup>1</sup>, Yoshitaka Ishii<sup>2</sup>, Kohtaro Kirimura<sup>1,2</sup>  
 (1 Dept. Appl. Chem., Fac. Sci. Eng., Waseda Univ.,<sup>2</sup> Waseda Res. Inst. Sci. Eng.)
- 15:06 1Gp08 1-Step Sulfopeptide Synthesis Using Recombinant Enzymes expressed in E.coli  
 ..... ○Katsuhisa Kurogi, Yuki Ikeda, Kyo Moriyama, Masahito Suiko, Yoichi Sakakibara  
 (Fac. Agric., Univ. Miyazaki)
- 15:18 1Gp09 <Topics>  
 Photoinduced methane oxidation using artificial lipid assemblies reconstituted with particulate methane monooxygenase and photosystem II  
 ..... ○Hidehiro Ito, Yuta Noto, Ryota Sekido, Wataru Sugimoto, Toshiaki Kamachi  
 (Sch. Life Sci. Technol, Tokyo Tech)
- 15:30 1Gp10 Mutagenesis analysis of the bacterial ulvan degradation pathway  
 ..... Yuki Kimura, Keiya Kajita, Kana Miyajima, ○Kouhei Ohnishi  
 (Fac. Agric. Agric. Sci. Prog., Kochi Univ.)
- 15:42 Break
- 15:54 1Gp11 *In vitro* glycosylation with UDP-glucose regeneration pathway  
 ..... ○Miyuki Sako, Ekaputra Jonathan, Kentarou Miyazaki, Takuma Suzuki,  
 Hiroya Tomita, Kousuke Honda  
 (ICBiotech, Osaka Univ.)
- 16:06 1Gp12 Utilization of a yeast resting cell reaction system for high-yield glycosylation by glycosyltransferase  
 ..... ○Hiroyuki Ohashi, Daisuke Koma, Takashi Ohmoto, Hayato Yamanaka (ORIST)
- 16:18 1Gp13 Construction of a rapid selection system of microbial transglutaminase mutants using hydrogel beads  
 ..... ○Taisei Koga<sup>1</sup>, Kensei Orita<sup>1</sup>, Yui Okawa<sup>1</sup>, Kosuke Minamihata<sup>1</sup>, Noriho Kamiya<sup>1,2</sup>  
 (1 Grad. Sch. Eng., Kyushu Univ.,<sup>2</sup> CFC, Kyushu Univ.)
- 16:30 1Gp14 Development of screening method for non-canonical cofactor utilizing enzyme coupled with artificial metabolic pathway  
 ..... ○Teppei Niide, Natsu Aoki, Yoshihiro Toya, Hiroshi Shimizu (Grad. Sch. IST, Osaka Univ.)
- 16:42 1Gp15 Development of aldehyde-deformylating oxygenase with substrate specificity toward medium-chain aldehydes by computational enzyme design  
 ..... ○Hisashi Kudo<sup>1</sup>, Akihiko Kondo<sup>1</sup>, Tomohisa Hasunuma<sup>2</sup>  
 (1 Grad. Sch. Sci. Technol. Innov., Kobe Univ.,<sup>2</sup> EGBRC, Kobe Univ.)

## Room H West Bldg. 3, W3-207 (13:30–16:54)

### 【Proteins】

- 13:30 1Hp01 Enhancing Membrane Expression of Olfactory Receptors Through Antagonist Supplementation  
 ..... ○Ikumi Takayama<sup>1</sup>, Nako Araki<sup>1</sup>, Hiroaki Matsunami<sup>2</sup>, Masafumi Yohda<sup>1</sup>, Yosuke Fukutani<sup>1</sup>  
 (1 Grad. Sch. Eng., Tokyo Univ. Agric. Technol.,<sup>2</sup> Dept. of MGM., Duke Univ.)
- 13:42 1Hp02 Rational design of protein folding pathways based on statistical mechanical theory  
 ..... ○Sae Kato<sup>1</sup>, Koji Ooka<sup>2</sup>, Runjing Liu<sup>1</sup>, Munehito Arai<sup>1,2,3</sup>  
 (1 Grad. Sch. Arts Sci., Univ. Tokyo,<sup>2</sup> Col. Arts & Sci., Univ. Tokyo,<sup>3</sup> Grad. Sch. Sci., Univ. Tokyo)

- 13:54** 1Hp03 Single molecule detection using *Enterococcus* pore-forming toxin (Epx4) nanopore  
 .....○Ayako Ijuin<sup>1</sup>, Kota Naito<sup>2</sup>, Ayaka Nakada<sup>3</sup>, Yuki Hagiri<sup>3</sup>,  
 Yoshikazu Tanaka<sup>2</sup>, Ryuji Kawano<sup>1,3</sup>  
 (1 Tokyo Univ. Agric. Technol., 2 Grad. Sch. Life Sci., Tohoku Univ.,  
 3 Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)
- 14:06** 1Hp04 Study of the nanofiber protein that can be polymerized by the radical coupling reaction  
 .....○Yuki Yokoe<sup>1</sup>, Rio Sugimoto<sup>1</sup>, Kosuke Minamihata<sup>2</sup>, Shogo Yoshimoto<sup>3</sup>,  
 Katsutoshi Hori<sup>3</sup>, Noriho Kamiya<sup>2,4</sup>, Masahito Ishikawa<sup>1</sup>  
 (1 Grad. Sch. Biosci., Nagahama Inst. Bio-Sci. Technol., 2 Grad. Sch. Eng., Kyushu Univ.,  
 3 Grad. Sch. Eng., Nagoya Univ., 4 CFC, Kyushu Univ.)
- 14:18** 1Hp05 Functional analysis of *Aspergillus luchuensis* nigeran synthase by site-specific mutagenesis  
 .....○Fuko Hirata<sup>1</sup>, Osamu Mizutani<sup>1,2</sup>, Toki Taira<sup>1,2</sup>, Keiko Uechi<sup>1,2</sup>  
 (1 United Grad. Sch. Agric. Sci., Kagoshima Univ., 2 Fac. Agric., Univ. Ryukyus)
- 14:30** Break
- 14:42** 1Hp06 Development of a red fluorescent protein-based immunosensor for myriad target molecules in vivo and in vitro  
 .....○Zixu Feng<sup>1</sup>, Ippei Tsujimura<sup>1</sup>, Sae Kazumi<sup>1</sup>, Takanobu Yasuda<sup>2</sup>,  
 Bo Zhu<sup>2</sup>, Toshiro Ito<sup>3</sup>, Tetsuya Kitaguchi<sup>2</sup>  
 (1 Sch. Life Sci. Technol, Tokyo Tech, 2 CLS, Tokyo Tech, 3 Grad. Sch. Biol. Sci., NAIST)
- 14:54** 1Hp07 Construction of cyclized functional protein with Catcher/Tag system for thermal responsive protein nanoparticles  
 .....○Kai Fujiwara, Kei Nishida, Makoto Ichikawa, Jun Yamaguchi,  
 Masayasu Mie, Eiry Kobatake  
 (Sch. Life Sci. Technol, Tokyo Tech)
- 15:06** 1Hp08 Functionalization of liposomal drugs using a spontaneous covalent bond formation system via lipid modification  
 .....○Kazuki Uchida<sup>1</sup>, Manuel Nagel<sup>2</sup>, Sofia Sueldo<sup>2</sup>, Rie Wakabayashi<sup>1</sup>,  
 Masahiro Goto<sup>1,3</sup>, Noriho Kamiya<sup>1,3</sup>  
 (1 Grad. Sch. Eng., Kyushu Univ., 2 Dept. Chem., Johannes Gutenberg-University Mainz,  
 3 CFC, Kyushu Univ.)
- 15:18** 1Hp09 Development of functional protein complexes by fusion of artificial protein nanoparticle TIP60 with lectins  
 ..... Shota Uchida<sup>1</sup>, Norifumi Kawakami<sup>2</sup>, Arun Burrumsetty<sup>3</sup>, Hiroaki Tateno<sup>3</sup>, Naruhiko Adachi<sup>4</sup>,  
 Masato Kawasaki<sup>4</sup>, Toshio Moriya<sup>4</sup>, Toshiya Senda<sup>4</sup>, ○Ryoichi Arai<sup>1,5</sup>  
 (1 Fac. Textile Sci. Technol., Shinshu Univ., 2 Fac. Sci. Technol., Keio Univ.,  
 3 Cell. Mol. Biotech. Res. Inst., AIST, 4 Inst. Mater. Struct. Sci., KEK, 5 Inst. Biomed. Sci., Shinshu Univ.)
- 15:30** 1Hp10 Adsorption of cutinase Cut11 to the Langmuir membrane of hydrophobin RolA derived from the fungus *Aspergillus oryzae*  
 .....○Shuma Iio<sup>1</sup>, Nao Takahashi<sup>1</sup>, Yuki Terauchi<sup>4</sup>, Takumi Tanaka<sup>2</sup>,  
 Akira Yoshimi<sup>3</sup>, Hiroshi Yabu<sup>5</sup>, Keietsu Abe<sup>1</sup>  
 (1 Grad. Sch. Agric. Sci., Tohoku Univ., 2 Grad. Sch. Eng., Osaka Univ.,  
 3 Grad. Sch. Glob. Environ. Stud., Kyoto Univ., 4 RCTMR, Yamaguchi Univ., 5 WPI-AIMR, Tohoku Univ.)
- 15:42** Break
- 15:54** 1Hp11 Profiling the substrates of MTG and searching for its preferred sequence  
 .....○Yuki Oba, Jasmina Damjanovic, Hideo Nakano, Teruyo Katou,  
 Kiyotaka Hitomi, Kalhari Munaweera  
 (Grad. Sch. Bioagric., Sci., Nagoya Univ.)
- 16:06** 1Hp12 Development of technology to improve proline-rich protein productivity using translation-enhancing peptides  
 .....○Riko Fujikawa, Hideo Nakano, Teruyo Kato (Grad. Sch. Bioagric., Sci., Nagoya Univ.)

- 16:18** 1Hp13 Development of an expression vector that directs efficient and inducible gene expression in *Geobacillus thermodenitrificans* K1041  
 .....○Masaki Murakami<sup>1</sup>, Takashi Ohshiro<sup>2,3</sup>, Hirokazu Suzuki<sup>2,3</sup>  
 (1 Dept. Eng., Grad. Sch. Sust. Sci., Tottori Univ.,<sup>2</sup> Fac. Eng., Tottori Univ.,<sup>3</sup> GSC, Tottori Univ.)
- 16:30** 1Hp14 As(III)-responsive ON-switching system by protein redesign  
 .....○Kojiro Shimizu<sup>1</sup>, Yusuke Yamaguchi<sup>2</sup>, Ryo Yamaguchi<sup>1</sup>, Shigeko Kawai-noma<sup>1</sup>  
 (1 Grad. Sch. Sci. Eng., Chiba Univ.,<sup>2</sup> Dept. Applied Chem. Biotech. Chiba Univ.)
- 16:42** 1Hp15 Development of a functional switch system for inducing As(III)-mediated protein conformational changes  
 .....○Shigeko Kawai-Noma<sup>1</sup>, Ryo Yamaguchi<sup>1</sup>, Kojiro Shimizu<sup>1</sup>, Katsumasa Kamiya<sup>2</sup>  
 (1 Grad. Sch. Eng., Chiba Univ.,<sup>2</sup> Fac. Edu., Kanagawa Inst. Technol.)

## Room I West Bldg. 2, W2-401 (13:30–16:54)

### 【Biomass, Bioresource and Energy Engineering】

- 13:30** 1Ip01 Characterization of novel *p*-coumaric acid monooxygenases from white-rot basidiomycete *Phanerochaete chrysosporium*  
 .....○Rinku Hamajima<sup>1</sup>, Mika Hayasaka<sup>2</sup>, Hiroyuki Kato<sup>1</sup>, Ryoga Tsurgami<sup>1</sup>,  
 Masashi Kato<sup>1</sup>, Motoyuki Shimizu<sup>1</sup>  
 (1 Grad. Sch. Agric., Meijo Univ.,<sup>2</sup> Grad. Grad. Sch. Agric., Meijo Univ.)
- 13:42** 1Ip02 Development of beta-1,3-xylan-utilizing *Halomonas elongata* by cell surface engineering technology  
 .....○Aoi Kaji<sup>1</sup>, Sanae Hori<sup>1</sup>, Mai Naganawa<sup>2</sup>, Hideki Nakayama<sup>3</sup>,  
 Kiyotaka Hara<sup>4</sup>, Fumiyoshi Okazaki<sup>1</sup>  
 (1 Grad. Sch. Bioresour., Mie Univ.,<sup>2</sup> Fac. Bioresour., Mie Univ.,  
<sup>3</sup> Grad. Sch. Fish. Sci. Environ. Stud., Nagasaki Univ.,<sup>4</sup> Sch. Food Nutr. Sci., Univ. Shizuoka.)
- 13:54** 1Ip03 Analysis of a cellulose nanowhisker-specific degrading enzyme in the bacterium isolate Y1  
 .....○Koki Suzuki, Takashi Ohtsuki (Grad. Sch. Life Environ. Sci.)
- 14:06** 1Ip04 Heterologous expression of carbonic anhydrase in the highly adhesive bacterium Tol 5 and enhancement of enzyme activity  
 .....○Kensho Abe<sup>1</sup>, Hiroya Oka<sup>1</sup>, Yuki Ohara<sup>2</sup>, Katsutoshi Hori<sup>1</sup>  
 (1 Grad. Sch. Eng., Nagoya Univ.,<sup>2</sup> Friend Microbe Inc.)
- 14:18** 1Ip05 Chemotaxis of zoospores of *Aurantiochytrium* sp. and its molecular mechanisms  
 .....○Hikaru Tatsuta, Moeko Arai, Kenshi Watanabe, Tsunehiro Aki  
 (Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)
- 14:30** Break
- 14:42** 1Ip06 Effect of the volatile substance produced by *Pseudomonas* sp. KS-4 on *Diaporthe destruens*  
 .....○Yuka Kurihara<sup>1</sup>, Hiroaki Kodama<sup>1</sup>, Toshiyuki Ito<sup>2</sup>, Yu Kajihara<sup>2</sup>, Ayaka Nishida<sup>2</sup>  
 (1 Grad. Sch. Fac. Horticult., Chiba Univ.,<sup>2</sup> Keiyo Gas Energy Solution Co., Ltd)
- 14:54** 1Ip07 Succinic acid production from paper sludge by using *Rhizopus delemar*  
 .....○Mika Kaiya, Maki Moriwaki (Grad. Sch. Sci. Eng., Univ. Toyama)
- 15:06** 1Ip08 Analysis of organic acid production by *Escherichia coli* using chemically synthesized non-natural sugars as the substrate  
 .....○Keisuke Hamaguchi, Yuki Yamada, Rika Miyake, Hiro Tabata, Shuji Nakanishi  
 (Grad. Sch. Eng. Sci., Osaka Univ.)

- 15:18 1Ip09 Gene regulatory network analysis for the exploration of transcription factors in the oil-producing alga *Fistulifera solaris*  
.....○Satoko Masaki, Hikaru Tago, Satoshi Murata, Tsuyoshi Tanaka  
(Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)
- 15:30 1Ip10 Biosynthesis of highly <sup>13</sup>C-labeled poly(3-hydroxybutyrate) from [U-<sup>13</sup>C<sub>6</sub>]D-Glucose  
.....○M Ramamoorthi Sivashankari, Yuki Miyahara, Takeharu Tsuge (Dept. Mat. Sci. Eng., Tokyo Tech)
- 15:42 Break
- 15:54 1Ip11 Search and characterization of mesophilic *Bacillus* species contributing to Polylactic acid (PLA) degradation  
.....○Kouichi Shimada<sup>1</sup>, Hitomi Kuroyanagi<sup>1</sup>, Hirofumi Sakoda<sup>1</sup>, Naoko Kamisaki<sup>1</sup>,  
Masayuki Tsuji<sup>2</sup>, Kenichiro Takumi<sup>2</sup>, Risa Shinobu<sup>2</sup>  
(<sup>1</sup> Prima Meat Packers, Ltd., <sup>2</sup> PIECLEX Co., Ltd.)
- 16:06 1Ip12 Investigation of the conditions for the formation of terrestrial algal *Nostoc commune* colonies  
.....○Yuki Doeda, Masaki Ihara, Kaede Tomiyama, Sora Misaidu  
(Grad. Sch. Sci. Technol., Shinshu Univ.)
- 16:18 1Ip13 Exploration of growth phase transition factors in the cultivation of formate-utilizing bacteria  
.....○Mayu Kitahara<sup>1</sup>, Masaki Ihara<sup>1</sup>, Kazuhiro Shibata<sup>1</sup>, Sora Nagano<sup>1</sup>,  
Takuto Morimoto<sup>1</sup>, Shinji Ebara<sup>2</sup>  
(<sup>1</sup> Grad. Sch. Sci. Technol., Shinshu Univ., <sup>2</sup> IMRA JAPAN Co., Ltd.)
- 16:30 1Ip14 Isolation of salt-tolerant methanotrophic bacteria strains  
.....○Hinako Hisaoka, Yuka Kimura, Toshiaki Nakajima (Grad. Sch. Life Environ. Sci., Univ. Tsukuba)
- 16:42 1Ip15 Molecular mechanism for degrading syringate, a vanillate analog, that enables selective vanillate production from a mixture of aromatics in sugarcane bagasse alkali hydrolysate  
.....○Kazuma Ikeda<sup>1</sup>, Naoya Kodama<sup>1</sup>, Zen Okawa<sup>3</sup>, Yudai Higuchi<sup>2</sup>,  
Naofumi Kamimura<sup>3</sup>, Eiji Masai<sup>3</sup>, Tomonori Sonoki<sup>2</sup>  
(<sup>1</sup> Grad. Sch. Life Sci., Hirosaki Univ., <sup>2</sup> Fac. Agric. Life Sci., Hirosaki Univ.,  
<sup>3</sup> Dept. Mater. Sci. Bioeng., Nagaoka Univ. Technol.)

## Room J West Bldg. 2, W2-402 (13:30–16:42)

### 【Bioremediation; Environmental Technology, Wastewater Treatment】

- 13:30 1Jp01 Aquatic toxicity and surface activity of the biosurfactant "sophorolipid"  
.....○Wataru Kumano, Michiaki Araki, Yoshihiko Hirata (Saraya Research Institute, Saraya Co., Ltd.)
- 13:42 1Jp02 Molecular breeding of *Cupriavidus necator* to synthesise lactate-based bioplastics  
.....○Suzue Ishikawa<sup>1</sup>, Mahiro Itakura<sup>2</sup>, Kenji Tanaka<sup>3</sup>, Seiichi Taguchi<sup>4</sup>, Hiromi Matsusaki<sup>1,2</sup>  
(<sup>1</sup> Grad. Sch. Environ. Sym. Sci., Pref. Univ. Kumamoto, <sup>2</sup> Fac. Environ. Sym. Sci., Pref. Univ. Kumamoto,  
<sup>3</sup> Fac. Humanity-Oriented Sci., Eng., Kindai Univ., <sup>4</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ.)
- 13:54 1Jp03 Screening of microorganisms that degrade polyethylene and produce bioplastic  
.....○Shiori Ujiie<sup>1</sup>, Takuma Isida<sup>1</sup>, Takehiro Chiba<sup>2</sup>, Daisuke Sugimori<sup>2</sup>, Miwa Yamada<sup>1</sup>  
(<sup>1</sup> Grad. Sch. Agric. Sci., Iwate Univ., <sup>2</sup> Fac. Symbio. Syst. Sci., Fukushima Univ.)
- 14:06 1Jp04 Isolation of polyethylene- and polypropylene-degrading microorganisms  
.....○Takehiro Chiba<sup>1</sup>, Shiori Ujiie<sup>2</sup>, Miwa Yamada<sup>3</sup>, Daisuke Sugimori<sup>1</sup>  
(<sup>1</sup> Fac. Symbio. Syst. Sci., Fukushima Univ., <sup>2</sup> Grad. Sch. Arts. Sci., Iwate Univ., <sup>3</sup> Fac. Agric., Iwate Univ.)
- 14:18 1Jp05 Enzymatic characterization of polyamide 4-degrading enzyme from marine bacterium  
.....○Ibuki Jin<sup>1</sup>, Yusuke Saito<sup>2</sup>, Miwa Yamada<sup>1,2</sup>  
(<sup>1</sup> Grad. Sch. Agric. Sci., Iwate Univ., <sup>2</sup> United Grad. Sch. Agric. Sci., Iwate Univ.)

- 14:30 Break
- 14:42 1Jp06 Screening of biodegradable plastic degrading microorganisms and enzymes involved in the degradation  
 ..... ○Yuji Takasuna<sup>1</sup>, Yuki Futagami<sup>2</sup>, Katsuhiko Fujiwara<sup>2</sup>, Kouichi Nozaki<sup>1</sup>  
 (1 Grad. Sch. Sci. Technol., Shinshu Univ., 2 MKV ADVANCE., LTD. Research and Development Dept.)
- 14:54 1Jp07 Assessing the potential for increasing PHB degradation ability by adaptation culture of bacteria  
 ..... ○Young-Cheol Chang<sup>1</sup>, Yui Sato<sup>2</sup>  
 (1 Grad. Sch. Sus. Environ. Eng., Muroran Inst. Technol., 2 Muroran Inst. Technol.)
- 15:06 1Jp08 Promotion of biodegradable plastic degradation using cutinase fused with carbohydrate-binding domain family 1  
 ..... ○Taiki Nakamura, Kouichi Nozaki (Grad. Sch. Sci. Technol., Shinshu Univ.)
- 15:18 1Jp09 Effects of microplastics made from biodegradable bioplastics on the gut microbiome of fish  
 ..... Yuna Nakagawa, ○Ryosuke Kadoya (Sch. of life Studies)
- 15:30 1Jp10 Assessment of Oxidative Stress Response in HaCaT Cells Exposed to Polystyrene Nanoparticles  
 ..... ○En Yu Huang<sup>1,2</sup>, Yu Wen Huang<sup>1</sup>, Ya Ting Chen<sup>1</sup>, Shu Ling Hsieh<sup>1</sup>  
 (1 Dept. SeaFood. Sci., Taiwan. Natl. Kaohsiung Univ. Sci. Technol.,  
 2 Grad. Sch. Integr. Sci. Technol., Nagasaki Univ.)
- 15:42 Break
- 15:54 1Jp11 <Topics>  
 The right theory of the biodegradation of carbon nanofibres and new technologies  
 ..... ○Katsutoshi Hori<sup>1,2</sup>, Seira Takahashi<sup>1</sup>, Jyunichi Kanie<sup>2</sup>, Mitsuo Ueno<sup>3</sup>,  
 Masafumi Ata<sup>3</sup>, Mizuki Sekiya<sup>3</sup>, Mitsugu Uejima<sup>3</sup>  
 (1 Grad. Sch. Eng., Nagoya Univ., 2 Friend Microbe, 3 Zeon)
- 16:06 1Jp12 Analysis of morphotype 1863, novel filamentous bacteria of the phylum *Bacteroidota* dominant in bulking activated sludge from wastewater treatment plants  
 ..... ○Takuto Okabe<sup>1</sup>, Kyohei Nakata<sup>1</sup>, Tomonori Kindaichi<sup>2</sup>, Minoru Takeda<sup>1</sup>, Tadashi Nittami<sup>1</sup>  
 (1 Grad. Sch. Eng., Yokohama Natl. Univ., 2 Grad. Sch. Sci., Hiroshima Univ.)
- 16:18 1Jp13 Analysis of enzymes involved in c-di-GMP synthesis and degradation in an ammonia oxidizing bacterium  
 ..... ○Akiko Nishimura, Tasuku Takahashi, Akio Suizu, Hidenori Kaneoka, Shinji Iijima  
 (Fac. Eng., Aichi Inst. Technol.)
- 16:30 1Jp14 Identification and characterization of a methyl-accepting chemotaxis protein in *Ralstonia pseudosolanacearum* using chemically undefined materials  
 ..... ○Asmaa Ali Ahmed<sup>1,2</sup>, Akiko Hida<sup>1</sup>, Takahisa Tajima<sup>1</sup>, Junichi Kato<sup>1</sup>  
 (1 Program of Biotechnology, Grad. Sch. Integr. Sci. Life, Hiroshima Univ.,  
 2 Dept. Agric. Microbiol., Fac. Agric., Minia Univ., Egypt)

## Room K Main Bldg., M-B07 (13:30–17:18)

### 【Brewing, Brewing Technology; Food Science, Food Technology】

- 13:30 1Kp01 Evaluation of synbiotic effect of sporulating lactic acid bacteria *Heyndrickxia coagulans* SANK70258 and prebiotic materials on the intestinal microflora by using an in vitro fecal fermentation system  
 ..... ○Yuta Noda, Akiko Sakamoto, Takayuki Maeda, Sho Yokoi,  
 Naoyuki Togawa, Masanori Aida, Ryouichi Yamada  
 (Mitsubishi Chemical Corp.)
- 13:42 1Kp02 Evaluation of the influence of small intestinal microorganisms on lipid digestion  
 ..... ○Rin Endo (Tokyo Metropolitan Ind. Tech. Res. Inst.)

- 13:54** 1Kp03 <Topics>  
Toward an extrapolation of human colonic microbiota by *in vitro* culture model  
.....○Daisuke Sasaki<sup>1,2</sup>, Tomoya Shintani<sup>1</sup>, Yasushi Matsuki<sup>3</sup>, Akihiko Kondo<sup>1,2</sup>  
(<sup>1</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ., <sup>2</sup> Bacchus Bio Innovation Co., Ltd.,  
<sup>3</sup> Strategic Planning Office, Kobe Univ.)
- 14:06** 1Kp04 Membrane vesicles of lactic acid bacteria  
.....○Tomoyo Nakamura, Kaho Shiomi, Rua Ikeda, Tomohiko Nishino  
(Sch. Biosci. Biotechnol., Tokyo Univ. Technol.)
- 14:18** 1Kp05 Inflammatory suppression of interstitial pneumonia by liposomal sugar mixture  
.....○Yusei Shinohara<sup>1</sup>, Osamu Fujii<sup>1</sup>, Toru Tasaka<sup>1</sup>, Souma Yoshino<sup>1</sup>, Shota Noda<sup>1</sup>,  
Aya Kobayashi<sup>1</sup>, Kiyomi Nakayama<sup>2</sup>, Hiroaki Sato<sup>3</sup>, Yoshihiro Uto<sup>1</sup>  
(<sup>1</sup> Grad. Sch. Biosci. Bioind, Tokushima Univ., <sup>2</sup> HBC FUNATO Co., Ltd., <sup>3</sup> Tsutsumi Planning Co., Ltd.)
- 14:30** Break
- 14:42** 1Kp06 Study on the production mechanism of the multiple bacteriocins of *Lactiplantibacillus plantarum* PUK6  
.....○Maki Yoshihara<sup>1</sup>, Akari Matsuda<sup>2</sup>, Ai Kawahara<sup>2</sup>, Takeshi Zendo<sup>3</sup>, Hiromi Matsusaki<sup>1,2</sup>  
(<sup>1</sup> Grad. Sch., Environ. Sym. Sci., Pref. Univ. Kumamoto, <sup>2</sup> Fac. Environ. Sym. Sci., Pref. Univ. Kumamoto,  
<sup>3</sup> Grad. Sch. Agric., Kyushu Univ.)
- 14:54** 1Kp07 Functional Analysis of c-di-AMP in *Lactococcus lactis*  
.....○Naoki Yamada, Tatsuki Kai, Mika Matsubara, Akiko Nishimura,  
Hidenori Kaneoka, Shinzi Iizima  
(Fac. Eng., Aichi Inst. Technol.)
- 15:06** 1Kp08 Influence of *Camellia sinensis* green tea and black tea extracts on *Lactobacillus* species as an implication for gastrointestinal health improvement  
.....○Nitsanat Cheepchirasuk<sup>1,2</sup>, Yingmanee Tragoolpua<sup>1</sup>, Thida Kaewkod<sup>1</sup>  
(<sup>1</sup> Dept. Biol., Fac. Sci., Chiang Mai Univ., Thailand, <sup>2</sup> PhD in Appl. Microbiol. (International Program),  
Fac. Sci., Chiang Mai Univ., Thailand)
- 15:18** 1Kp09 Ethanolphilic lactic acid bacteria found in narazuke  
.....○Motomu Yoshioka<sup>1</sup>, Yukihiko Masuda<sup>2</sup>, Mariko Mori<sup>3</sup>, Daisuke Watanabe<sup>1</sup>  
(<sup>1</sup> Grad. Sch. Biol. Sci., NAIST, <sup>2</sup> Naraya Honten, <sup>3</sup> Morinaraduketen Co.,LTD.)
- 15:30** 1Kp10 Purification and analysis of growth stimulators obtained from soybean to *Philodulcilaetobacillus myokonensis* WR16-4<sup>T</sup>  
.....○Tomoaki Kouya, Sakuya Ugajin, Mina Oyama (Oyama Natil. Coll. Technol.)
- 15:42** Break
- 15:54** 1Kp11 Rice Variety and Spatial Dependent Glutelin Subtype Accumulation in Rice Grains  
.....○Kei Takahashi, Hiromi Kohno, Midori Joyo, Masaki Okuda (NRIB)
- 16:06** 1Kp12 Analysis of structural characteristics in the encapsulation of stilbenoids into cavities of beta-glucan nanoparticles  
.....○Yukina Kometani, Yasushi Nishida, Kazuya Koumoto (FIRST, Konan Univ.)
- 16:18** 1Kp13 The effect of degree of branching of polysaccharide chains composing beta-glucan nanoparticles on the inclusion and release of guest molecules  
.....○Nami Kohama, Kazuya Koumoto (FIRST, Konan Univ.)
- 16:30** 1Kp14 Analysis of antioxidant activity of soy isoflavone metabolites and induction of imidazole dipeptide synthase expression  
.....○Yuto Harushima, Katsuhisa Kurogi, Kiyoko Nagahama, Masahito Suikou, Yoichi Sakakibara  
(Grad. Sch. Agric., Univ. Miyazaki.)
- 16:42** 1Kp15 Decreased expression of beta-glucosidase-related genes in *Bacillus subtilis* var. natto  
.....○Shyuichiro Inagaki, Hiroka Fujimoto (Osaka Shoin Women's Univ.)
- 16:54** 1Kp16 Development of highly soluble *Citrus maxima* peel powder using microbial enzyme  
.....○Taiki Tanizaki (Grad. Sch. Eng., Sojo Univ.)



- 17:06** 1Kp17 Research on *Amazake* production process to increase Resistant Protein  
 .....○Tatsuki Kato<sup>1</sup>, Mika Nakada<sup>1</sup>, Hikari Kawano<sup>1</sup>, Azumi Otake<sup>1</sup>, Yuki Ishigaki<sup>2</sup>,  
 Hiroki Fujioka<sup>2</sup>, Kan Yamashiro<sup>2</sup>, Hideyuki Yamashita<sup>3</sup>, Kenji Ozeki<sup>1</sup>  
 (<sup>1</sup> Genome Biotechnol. Lab., Kanazawa Inst. Technol., <sup>2</sup> Amano Enzyme Inc.,  
<sup>3</sup> Higuchi Matsunosuke Shoten Co., Ltd.)

## Room L Main Bldg., M-103 (13:30–17:06)

### 【Biosensing and Analytical Chemistry; Sensors and Monitoring Devices】

- 13:30** 1Lp01 Establishment of ultra-fast and highly sensitive analytical method for W/O droplets using MALDI-mass spectrometry  
 .....Ryogo Takai<sup>1</sup>, Masamune Morita<sup>2</sup>, Satoko Matsukura<sup>2</sup>, Satoshi Matsuoka<sup>1</sup>, Koretsugu Ogata<sup>1</sup>,  
 Masaki Kanai<sup>1</sup>, Yoichi Kamagata<sup>2</sup>, Naohiro Noda<sup>2</sup>, ○Daisuke Miura<sup>2</sup>  
 (<sup>1</sup> Shimadzu Corp., <sup>2</sup> Biomed. Res. Inst., AIST)
- 13:42** 1Lp02 A novel approach for natural products from actinomycete metabolites using LC-Raman  
 .....○Takuma Kyotani<sup>1</sup>, Takuji Nakashima<sup>2</sup>, Masahiro Ando<sup>2</sup>, Haruko Takeyama<sup>1,2,3,4</sup>  
 (<sup>1</sup> Grad. Sch. Adv. Sci. Eng., Waseda Univ., <sup>2</sup> Res. Org. Nano Life Innov., Waseda Univ.,  
<sup>3</sup> CBBD-OIL, AIST-Waseda Univ.,  
<sup>4</sup> Inst. Adv. Res. Biosyst. Dyn., Waseda Res. Inst. Sci. Eng., Waseda Univ.)
- 13:54** 1Lp03 Measurement of Glycolytic Oscillations in Baker's Yeast by <sup>1</sup>H-NMR and Analysis of Phase Relationships  
 .....○Miho Sesumi, Akifumi Ikehata (NFRI)
- 14:06** 1Lp04 Metabolome analysis of juvenile coral at planula and polyp stages using GC-TOFMS  
 .....○Azusa Kubota<sup>1</sup>, Masaaki Ubukata<sup>1</sup>, Nanami Mizusawa<sup>2</sup>, Mariko Iijima<sup>3</sup>,  
 Yoshikazu Ohno<sup>2</sup>, Kenichi Suzumura<sup>1</sup>, Jun Yasumoto<sup>4</sup>, Ko Yasumoto<sup>2</sup>  
 (<sup>1</sup> JEOL Ltd., <sup>2</sup> Marine Bio., Kitasato Univ., <sup>3</sup> AIST, <sup>4</sup> Fac. Agric., Univ. Ryukyus)
- 14:18** 1Lp05 Development of rapid microorganism testing system for food / pharmaceutical field with the signaling probe-based DNA microarray  
 .....○Yuko Hirakawa<sup>1,2</sup>, Hidetoshi Aoki<sup>1</sup>, Chika Mamura<sup>1,2</sup>, Tomoyuki Taguchi<sup>1</sup>  
 (<sup>1</sup> Yokogawa Electric Corp., <sup>2</sup> Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)
- 14:30** Break
- 14:42** 1Lp06 Texture characterization of vegetables and fruits utilizing infrared absorption of oxygen  
 .....○Miho Sase<sup>1</sup>, Hiroki Okawa<sup>1</sup>, Takenobu Ogawa<sup>3</sup>, Mitsuru Tanaka<sup>4</sup>, Yukio Kawano<sup>1,2</sup>  
 (<sup>1</sup> KISTEC, <sup>2</sup> Fac. Sci. Eng., Chuo Univ., <sup>3</sup> Grad. Sch. Agric., Kyoto Univ.,  
<sup>4</sup> Grad. Sch. Agric., Kyushu Univ.)
- 14:54** 1Lp07 Development of a wearable pH sensor for measuring pH buffering capacity of a plant leaf surface  
 .....○Sho Tanaka, Kuniaki Nagamine (Grad. Sch. Org., Yamagata Univ.)
- 15:06** 1Lp08 Advancements in magnetic metal-organic frameworks for enhanced SARS spike protein detection using electrochemical biosensor  
 .....○Liu Chi Hsien<sup>1</sup>, Malla Pravanjan<sup>1</sup>, Rath Dharitri<sup>2</sup>  
 (<sup>1</sup> Dept. Chem. Mater. Eng., Chang Gung Univ., Taiwan,  
<sup>2</sup> Dept. Chem. Eng., IIT Jammu, India)
- 15:18** 1Lp09 Ultrasensitive electrochemical genosensor for simultaneous detection of miRNA-21 & miRNA(DNA)-3960 by using magnetic bimetallic MOF  
 .....○Muhammad Faizan, Pravanajan Malla, Chi Hsien Liu  
 (Dept. Chem. Mater. Eng., Chang Gung Univ., Taiwan)

- 15:30** 1Lp10 Development of a thread based wearable pH sensor for skin surface analysis  
 .....○Yutaro Harada, Kuniaki Nagamine (Grad. Sch. Org., Yamagata Univ.)
- 15:42** Break
- 15:54** 1Lp11 Minimally invasive electrical stimulation to control membrane potential in *Bacillus subtilis*  
 .....○Hirotaaka Matsumoto<sup>1</sup>, Riku Ueda<sup>2</sup>, Marika Aoyagi<sup>1</sup>, Shoi Harada<sup>2</sup>, Kuniaki Nagamine<sup>1,2</sup>  
 (1 Grad. Sch. Org., Yamagata Univ., 2 Fac. Eng. Yamagata Univ.)
- 16:06** 1Lp12 Simultaneous Electrorotation Device for Single-Cell Analysis during Chemical Stimulation  
 .....○Masato Suzuki<sup>1,2</sup>, Sakura Mizutani<sup>1</sup>, Moe Fujimoto<sup>1</sup>, Ryogo Yamada<sup>1</sup>,  
 Yushi Isozaki<sup>1,2</sup>, Tomoyuki Yasukawa<sup>1,2</sup>  
 (1 Grad. Sch. Sci., Univ. Hyogo., 2 Adv. Med. Eng. Res. Inst. Univ. Hyogo.)
- 16:18** 1Lp13 Evaluation of cancer cells using quartz crystal microbalance method and analysis of effects on anticancer drugs  
 .....○Hao Long, Hiroshi Muramatsu, Tomoyasu Sugiyama  
 (Grad. Sch. Bionics Comput. Media Sci., Tokyo Univ. Technol.)
- 16:30** 1Lp14 Precise surface control of InP quantum dots for single molecule imaging of biomolecules  
 .....○Yuna Sano<sup>1</sup>, Noriko Nakamura<sup>1</sup>, Kazuhiro Nakatsui<sup>2</sup>, Taiki Tsuzukiishi<sup>2</sup>,  
 Tomo Sakanoue<sup>2</sup>, Seiichi Ohta<sup>1</sup>  
 (1 Grad. Sch. Eng., Univ. Tokyo, 2 Nippon Chemical Ind.)
- 16:42** 1Lp15 CF3-based detection of slightly aggregated nanoparticles modified with antibody and their impact on bioassay  
 .....○Hiroki Tsuchiya, Noriko Nakamura, Seiichi Ohta (Grad. Sch. Eng., Univ. Tokyo)
- 16:54** 1Lp16 DNA-mediated assembly of fluorescent nanoparticles for sensitive detection of cell surface markers  
 .....○Yuki Maeda, Noriko Nakamura, Seiichi Ohta (Grad. Sch. Eng., Univ. Tokyo)

## Room M Main Bldg., M-123 (13:30–17:18)

### 【Cell Culture Engineering; Bioprocess Engineering】

- 13:30** 1Mp01 Development of pluripotent stem cell medium specialized for automated culture systems  
 .....○Yugo Okazaki<sup>1</sup>, Yuko Kitano<sup>2</sup>, Kenji Yoshimoti<sup>1</sup>, Motoshi Shimotuma<sup>1</sup>,  
 Tomoaki Kato<sup>2</sup>, Masayoshi Tsukahara<sup>2</sup>  
 (1 NACALAI TESQUE, INC., 2 CiRA\_F)
- 13:42** 1Mp02 Senescence-state-selective peptides for Mesenchymal Stem Cells  
 .....○Takumi Taga<sup>1</sup>, Katsuyuki Izumi<sup>1</sup>, Akiyo Fujimoto<sup>1</sup>, Kenjiro Tanaka<sup>1</sup>, Ryuji Kato<sup>1,2,3</sup>  
 (1 Grad. Sch. Pharm. Sci., Nagoya Univ., 2 Inst. Nano-Life-Syst., 3 iGCORE)
- 13:54** 1Mp03 Effect of conditioned media on the angiogenic activity of mesenchymal stem cells  
 .....○Mami Tsujimoto, SongHo Moon, Yuzuru Ito (Grad. Sch. Life Environ. Sci., Univ. Tsukuba)
- 14:06** 1Mp04 Usefulness of several automated cell counter for strong aggregation fish-derived cells in comparison with manual cell counting  
 .....○Misato Mori, Sumire Mitarai, Hidenori Miyadai, Kohei Fukuda (Kyoritsu Seiyaku Corporation)
- 14:18** 1Mp05 Non-invasive cellular evaluation by ultra-sensitive confocal microscopy  
 .....○Chigusa Okano<sup>1</sup>, Chikaho Sano<sup>2</sup>, Chihiro Horie<sup>2</sup>, Yujiro Eto<sup>3,4</sup>,  
 Kazuki Niwa<sup>5</sup>, Daiji Fukuda<sup>4,5</sup>, Nobuhiko Nomura<sup>1,6</sup>, Yutaka Yawata<sup>1,6</sup>  
 (1 Fac. Life Environ. Sci., Univ. Tsukuba, 2 Grad. Sch. Life Environ. Sci., Univ. Tsukuba,  
 3 Grad. Sch. Eng., Kyoto Univ., 4 OPERANDO-OIL, 5 AIST, 6 MiCS)
- 14:30** Break

- 14:42 1Mp06 Unstained Live Cell Classification in Timeseries iPS Cell Images  
 ..... ○Shuhei Toba<sup>1</sup>, Yoji Yamamoto<sup>1</sup>, Anna Ueda<sup>2</sup>, Masayoshi Tsukahara<sup>2</sup>  
 (1 Canon Inc., 2 CiRA Foundation)
- 14:54 1Mp07 Effect of freezing and thawing methods on the viability of human iPSCs  
 ..... ○Anna Ueda<sup>1</sup>, Shuhei Toba<sup>2</sup>, Yoji Yamamoto<sup>2</sup>, Masayoshi Tsukahara<sup>1</sup>  
 (1 CiRA Foundation, 2 Canon Inc.)
- 15:06 1Mp08 Detection of Chromosomal Abnormalities in iPS Cells by Colony Image Analysis  
 ..... ○Yukiteru Masuda<sup>1</sup>, Mie Okano<sup>1</sup>, Yoji Yamamoto<sup>1</sup>, Masayoshi Tsukahara<sup>2</sup>  
 (1 Canon Inc., 2 CiRA Foundation)
- 15:18 1Mp09 <Topics>  
 Myoblast culture without scaffold in suspension culture  
 ..... ○Koshiro Hashimoto<sup>1,2</sup>, Kota Shimizu<sup>2</sup>, Noriko Yamano-Adachi<sup>2</sup>, Takeshi Omasa<sup>2</sup>  
 (1 NH Foods Ltd. R&D center, 2 Grad. Sch. Eng., Osaka Univ.)
- 15:30 1Mp10 Large-scale cultivation of human iPS cells in bioreactor with reciprocal mixing  
 ..... ○Masashi Ueki<sup>1</sup>, Tadashi Suzuki<sup>1</sup>, Yoshikazu Kato<sup>1,2</sup> (1 CPR, RIKEN, 2 SATAKE MultiMix Corp.)
- 15:42 Break
- 15:54 1Mp11 Mass production of a biologically active azaphilone in a large scale interface fermentor  
 ..... ○Shinobu Oda, Fuka Kumazaki, Riko Murakami  
 (Genome Biotechnol. Lab., Kanazawa Inst. Technol.)
- 16:06 1Mp12 High cell density cultures of *S. cerevisiae* using an improved MAXBLEND<sup>®</sup> reactor  
 ..... ○Yoshiro Ikeya<sup>1</sup>, Aya Tanaka<sup>1</sup>, Prihardi Kahar<sup>2</sup>, Chiaki Ogino<sup>2</sup>, Katsuhide Takenaka<sup>2</sup>  
 (1 Sumitomo Heavy Ind. Process Equipment, 2 Grad. Sch. Eng, Kobe Univ.)
- 16:18 1Mp13 Exploration of culture conditions for the optimization of *Flavobacterium psychrophilum* growth  
 ..... ○Chiho Taniguchi, Hidenori Miyadai, Misato Mori, Kohei Fukuda (Kyoritsu Seiyaku Corporation)
- 16:30 1Mp14 Effective production of VHH derived from *Camelidae* antibody using recombinant *Escherichia coli*  
 ..... ○Atsuya Yamamoto, Yoichi Kumada, Jun-ichi Horiuchi  
 (Grad. Sch. Sci. Technol., Kyoto Inst. Technol.)
- 16:42 1Mp15 Enhancement of antibody production of Hybridoma cells using sericin under hyperosmolarity  
 ..... ○Satoshi Terada<sup>1</sup>, Naoki Shimizu<sup>1</sup>, Genki Iketani<sup>1</sup>, Yuta Kanasashi<sup>1</sup>, Jun Takahashi<sup>2</sup>  
 (1 Grad. Sch. Eng. Fukui Univ., 2 Seiren)
- 16:54 1Mp16 Effects of glycyl-glutamine on metabolism and antibody production in CHL-YN cells  
 ..... ○Hiroki Sadotomo<sup>1</sup>, Noriko Yamano-Adachi<sup>1,2</sup>, Takeshi Omasa<sup>1,2</sup>  
 (1 Grad. Sch. Eng., Osaka Univ., 2 OTRI, Osaka Univ.)
- 17:06 1Mp17 The effect of alpha-ketoglutaric acid addition on antibody productivity in CHL-YN cells  
 ..... ○Mai Morikawa, Noriko Yamano-Adachi, Takeshi Omasa (Grad. Sch. Eng., Osaka Univ.)

## Room N Main Bldg., M-124 (13:30–17:18)

### 【Biochemical Engineering】

- 13:30 1Np01 Analysis of the effect of mixing operations on the viability of skin bacteria in liquids and preparation of model microbiota system  
 ..... ○Haruka Sato<sup>1</sup>, Hideki Aoyagi<sup>1,2</sup> (1 Grad. Sch. Deg. P. Agro-Bioresour. Sci. Technol., Univ. Tsukuba,  
 2 Inst. Life Environ. Sci., Univ. Tsukuba)

- 13:42** 1Np02 Analysis of the effect of mixing with vortex mixer on the viability of bacteria in liquids  
 .....Shun Nakanishi<sup>1</sup>, Haruka Sato<sup>1</sup>, ○Ryo Osaki<sup>2</sup>, Kenta Shimada<sup>2</sup>,  
 Mika Kikuta<sup>1</sup>, Aki Fujino<sup>1</sup>, Hideki Aoyagi<sup>1,2,3</sup>  
 (<sup>1</sup> Grad. Sch. Deg. P. Agro-Bioresour. Sci. Technol., Univ. Tsukuba,  
<sup>2</sup> Coll. Agro-Bio. Resour. Sci., Univ. Tsukuba, <sup>3</sup> Inst. Life Environ. Sci., Univ. Tsukuba)
- 13:54** 1Np03 Modeling of a spargerless aeration and stirring system facilitating gas phase composition control in liquid cultivation  
 .....○Shinji Hama<sup>1</sup>, Maki Kihara<sup>1</sup>, Sayaka Takenaka<sup>1</sup>, Ritsuko Sahashi<sup>1</sup>,  
 Kensuke Matsuura<sup>1</sup>, Hideo Noda<sup>1,2</sup>  
 (<sup>1</sup> Bio-energy Corp., <sup>2</sup> Kansai Chemical Engineering Co., Ltd.)
- 14:06** 1Np04 Construction and validation of a metabolic pathway model for thermophilic actinomycetes  
 .....○Togo Yamada, Kahar Prihardi, Yutaro Mori, Chiaki Ogino (Grad. Sch. Eng. Kobe Univ.)
- 14:18** 1Np05 Secretory production of PETase by *Streptomyces thermoviolaceus* and its characterization  
 .....○Daiuske Sakamoto, Yutaro Mori, Kahar Prihardi, Chiaki Ogino (Grad. Sch. Eng. Kobe Univ.)
- 14:30** Break
- 14:42** 1Np06 Development and evaluation of a virus inactivation device using UVC for prevention of droplet and airborne infection  
 .....○Yuki Ohara<sup>1</sup>, Masaki Ohashi<sup>2</sup>, Kiyomi Kato<sup>3</sup>, Katsutoshi Hori<sup>1,4</sup>  
 (<sup>1</sup> Friend Microbe Inc., <sup>2</sup> Kojima Sangyo Co., Ltd, <sup>3</sup> Unitech Co., Ltd, <sup>4</sup> Grad. Sch. Eng., Nagoya Univ.)
- 14:54** 1Np07 3D surface chemical processing on polypropylene for long-lasting biocidal activity  
 .....○Rie Hirao, Hisato Takeuchi, Jumpei Kawada, Nobuhiro Ishida (Toyota Cent. R&D Labs. Inc.)
- 15:06** 1Np08 Production of porcine rotavirus A-like particles in silkworm larvae for the evaluation as a vaccine  
 ..... Yuki Nishiura<sup>1</sup>, Suguru Hase<sup>1</sup>, Y. Enoch Park<sup>1</sup>, Toru Suzuki<sup>2</sup>, ○Tatsuya Kato<sup>1,3</sup>  
 (<sup>1</sup> Fac. Agric., Shizuoka Univ., <sup>2</sup> NIAH, NARO, <sup>3</sup> Res. Inst. Green Sci. Technol., Shizuoka Univ.)
- 15:18** 1Np09 The effect of cosmetic additions to cultures of *Staphylococcus aureus* and *Staphylococcus epidermidis*  
 .....○Naohiko Taga, Kazumasa Yakita (Sch. Agric., Tokai Univ.)
- 15:30** 1Np10 Evaluation of antifungal action of L-alpha,beta-diaminopropionic acid polymer with a comb-like structure against *Saccharomyces cerevisiae*  
 .....○Koki Tanaka<sup>1</sup>, Yoshinao Kato<sup>1</sup>, Amane Tanimura<sup>1</sup>, Munenori Takehara<sup>1</sup>, Yoshiharu Inoue<sup>2</sup>  
 (<sup>1</sup> Dept. Mater. Sci., Grad. Sch. Eng., Univ. Shiga Pref.,  
<sup>2</sup> Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ.)
- 15:42** Break
- 15:54** 1Np11 Genome analysis of soybeans root endophytic bacteria to identify plant growth-promoting bacteria  
 ..... ○Yuki Onishi<sup>1,2</sup>, Yohei Nishikawa<sup>2,3</sup>, Masako Kifushi<sup>1,2</sup>, Masahito Hosokawa<sup>1,2,3,4</sup>,  
 Khoki Kashiwagi<sup>1,2</sup>, Atsuko Matsumoto<sup>3</sup>, Takuji Nakashima<sup>3</sup>,  
 Toyoaki Anai<sup>5</sup>, Haruko Takeyama<sup>1,2,3,4</sup>  
 (<sup>1</sup> Grad. Sch. Adv. Sci. Eng., Waseda Univ., <sup>2</sup> CBBD-OIL, AIST-Waseda Univ.,  
<sup>3</sup> Res. Org. Nano Life Innov., Waseda Univ.,  
<sup>4</sup> Inst. Adv. Res. Biosyst. Dyn., Waseda Res. Inst. Sci. Eng., Waseda Univ., <sup>5</sup> Fac. Agric., Kyushu Univ.)
- 16:06** 1Np12 Evaluation of plant growth-promoting trait of rhizosphere microbial consortium using single-cell genome  
 .....○Masako Kifushi<sup>1,2</sup>, Yohei Nishikawa<sup>2,3</sup>, Masahito Hosokawa<sup>1,2,3,4</sup>, Kodai Sakuma<sup>1</sup>,  
 Shinji Nakaoka<sup>5</sup>, Naoko Ohtsu<sup>6</sup>, Toyoaki Anai<sup>7</sup>, Haruko Takeyama<sup>1,2,3,4</sup>  
 (<sup>1</sup> Grad. Sch. Adv. Sci. Eng., Waseda Univ., <sup>2</sup> CBBD-OIL, AIST-Waseda Univ.,  
<sup>3</sup> Res. Org. Nano Life Innov., Waseda Univ.,  
<sup>4</sup> Inst. Adv. Res. Biosyst. Dyn., Waseda Res. Inst. Sci. Eng., Waseda Univ.,  
<sup>5</sup> Grad. Sch. Life Sci., Hokkaido Univ., <sup>6</sup> Grad. Sch. Agric., Tokyo Univ. Agric. Technol.,  
<sup>7</sup> Grad. Sch. Agric., Kyushu Univ.)
- 16:18** 1Np13 Analysis of the phenomenon of transposon insertion into plasmids in *Escherichia coli*  
 ..... ○Shiho Ozeki (Grad. Sch. Sci. Technol., Shinshu Univ.)

- 16:30** 1Np14 Search for consensus sequences of signal peptides using *Escherichia coli* alkaline phosphatase PhoA  
 .....○Yuna Akikusa<sup>1</sup>, Rinji Akada<sup>2</sup>, Mikiko Nakamura<sup>3</sup>  
 (<sup>1</sup> Grad. Sch. Sci. Technol., Shinshu Univ., <sup>2</sup> Dept. Appl. Chem., Yamaguchi Univ.,  
<sup>3</sup> Dept. Inst. Anal., Shinshu Univ.)
- 16:42** 1Np15 Functional analysis of the hydrophobic compounds-transporters of *Acinetobacter* sp. Tol 5  
 .....○Sakura Mori, Shogo Yoshimoto, Shori Inoue, Hiroya Oka, Katsutoshi Hori  
 (Grad. Sch. Eng., Nagoya Univ.)
- 16:54** 1Np16 Construction of a self-replicating system driven by gene expression of replication cycle reaction (RCR)  
 .....○Yuta Yamagishi, Yoshiki Sonoyama, Naoki Kawakami, Tomonori Hasebe, Masayuki Suetsugu  
 (Grad. Sch. Sci., Rikkyo Univ.)
- 17:06** 1Np17 The influence of methionine on the response of Antarctic yeast to cold stress  
 .....○Tatsuya Fujikawa<sup>1</sup>, Masaharu Tsuji<sup>1,2</sup> (<sup>1</sup> Asahikawa Natl. Coll. Technol., <sup>2</sup> NIPR)

## Room O Main Bldg., M-178 (13:30–17:18)

### 【Nucleic Acid Engineering; Peptide Engineering; Lipid Engineering; Glycoengineering】

- 13:30** 1Op01 Prototyping synthetic riboswitches using cell-free system  
 .....○Keisuke Fukunaga<sup>1</sup>, Yuta Ishii<sup>2</sup>, Toshitaka Ohtani<sup>2</sup>, Aileen Cooney<sup>1,3</sup>,  
 Yohei Yokobayashi<sup>4</sup>, Tomoaki Matsuura<sup>1</sup>  
 (<sup>1</sup> ELSI, Tokyo Tech, <sup>2</sup> Sch. Life Sci. Technol, Tokyo Tech, <sup>3</sup> Dep. Chem., Imperial College London, <sup>4</sup> OIST)
- 13:42** 1Op02 Development of CRISPR-Cas-inspired RNA-guided functional proteins using click reaction and its application for imaging targeted sequences in living cells  
 .....○Jun Nakamura<sup>1</sup>, Miyako Shiraishi<sup>2</sup>, Junpei Yamamoto<sup>2</sup>, Keiichiro Suzuki<sup>1,2,3</sup>  
 (<sup>1</sup> Grad. Sch. Frontier Biosci., Osaka Univ., <sup>2</sup> Grad. Sch. Eng. Sci., Osaka Univ.,  
<sup>3</sup> Inst, Advanced Co-Creation, Osaka Univ.)
- 13:54** 1Op03 Rapid, easy, and high-sensitive antigen detection method; cDNA display combined with isothermal PCR  
 .....○Junpei Yamashita, Naoto Nemoto (Grad. Sch. Sci. Eng., Saitama Univ.)
- 14:06** 1Op04 Stabilization of thermostable strand-displacing DNA polymerase from *Aeribacillus pallidus* H1  
 .....○Koki Nishi<sup>1</sup>, Akari Takada<sup>2</sup>, Itaru Yanagihara<sup>3</sup>, Yukiko Nakura<sup>3</sup>,  
 Kiyoshi Yasukawa<sup>4</sup>, Shinsuke Fujiwara<sup>1,2</sup>  
 (<sup>1</sup> Grad. Sch. Sci. Technol., Kwansei Gakuin Univ., <sup>2</sup> Sch. Biol. Environ. Sci., Kwansei Gakuin Univ.,  
<sup>3</sup> Osaka Women's and Children's Hosp., <sup>4</sup> Grad. Sch. Agric., Kyoto Univ.)
- 14:18** 1Op05 Helicase-Dependent DNA Amplification Using Two Thermostable DNA Helicases from *Thermococcus kodakarensis*  
 .....○Akari Takada<sup>1</sup>, Koki Nishi<sup>2</sup>, Yuto Murakami<sup>2</sup>, Koichiro Suzuki<sup>3</sup>,  
 Itaru Yanagihara<sup>4</sup>, Kiyoshi Yasukawa<sup>5</sup>, Shinsuke Fujiwara<sup>1,2</sup>  
 (<sup>1</sup> Sch. Sci. Technol., Kwansei Gakuin Univ., <sup>2</sup> Grad. Sch. Sci. Technol., Kwansei Gakuin Univ.,  
<sup>3</sup> Res. Inst. for Microbial Diseases, <sup>4</sup> Osaka Women's and Children's Hosp., <sup>5</sup> Grad. Sch. Agric., Kyoto Univ.)
- 14:30** Break
- 14:42** 1Op06 Analysis of chitinases from molting land crabs  
 .....○Katsuhide Miyake, Yuma Nagakura, Kouta Okamura  
 (Dept. Environ. Tech., Fac. Sci. Tech., Meijo Univ.)
- 14:54** 1Op07 Comparative analysis of *N*-Glycan profiling of S2 cells: serum-free medium versus serum containing condition  
 .....○Nomin Myagmar<sup>1</sup>, Hiroyuki Kajiuira<sup>2,3</sup>, Ryo Misaki<sup>2,3</sup>, Kazuhito Fujiyama<sup>2,3</sup>  
 (<sup>1</sup> Grad. Sch. Eng., Osaka Univ., <sup>2</sup> ICBiotech, Osaka Univ., <sup>3</sup> OTRI, Osaka Univ.)

- 15:06** 1Op08 Characterization of glucosyltransferase involved in the biosynthesis of phenylpropanoid glycosides that mitigate hyperuricemia  
 .....○Sayaka Yamamoto<sup>1</sup>, Ryuichiro Tanaka<sup>2</sup>, Takao Ohashi<sup>1</sup>  
 (<sup>1</sup> Fac. Sci. Eng., Setsunan U., <sup>2</sup> Fac. Pharm., Setsunan U.)
- 15:18** 1Op09 Creation of novel terpenes by genome mining and mutation of Class IB Terpene Synthases  
 .....○Shogo Iwakata<sup>1</sup>, Ikiru Otsuka<sup>1</sup>, Shuya Azuma<sup>1</sup>, Sohei Kanemoto<sup>2</sup>, Shuya Fukai<sup>2</sup>,  
 Masahiro Fujihashi<sup>3</sup>, Tetsuro Shinada<sup>4</sup>, Daijiro Ueda<sup>1</sup>, Tsutomu Sato<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Sci. Technol., Niigata Univ., <sup>2</sup> Grad. Sch. Sci., Kyoto Univ.,  
<sup>3</sup> Fac. Med., Osaka Med. Pharm. Univ., <sup>4</sup> Grad. Sch. Sci., Osaka Metro. Univ.)
- 15:30** Break
- 15:54** 1Op11 Comprehensive point mutation scanning unveils structural features and salt stress tolerance function of late embryogenesis abundant peptides  
 .....○Shinya Ikeno, Soma Kishikawa, Hibiki Kai, Yinghan Wu  
 (Grad. Sch. Life Sci. Syst. Eng., Kyushu Inst. Technol.)
- 16:06** 1Op12 Peptide Array Screening with Anti-GLP-1 Monoclonal Antibody: Discovery of Cysteine-containing DPP-IV Inhibitory Peptides  
 .....○Masaki Kurimoto<sup>1,2</sup>, Naoki Yuda<sup>1</sup>, Masayoshi Tanaka<sup>2</sup>, Miyuki Tanaka<sup>1</sup>, Mina Okochi<sup>2</sup>  
 (<sup>1</sup> Morinaga Milk Industry Co., Ltd., <sup>2</sup> Sch. Mater. Chem. Technol., Tokyo Tech)
- 16:18** 1Op13 Screening of vitronectin-derived peptides that induce osteoclast differentiation  
 .....○Takumi Haga, Naho Yamazawa, Shogo Saito, Masayoshi Tanaka, Mina Okochi  
 (Sch. Mater. Chem. Technol., Tokyo Tech)
- 16:30** 1Op14 Evaluation of migrasome formations in human umbilical vein endothelial cells on peptide modified substrates  
 .....○Shogo Saito, Yukako Suzuki, Masayoshi Tanaka, Mina Okochi  
 (Sch. Mater. Chem. Technol., Tokyo Tech)
- 16:42** 1Op15 Exploration of olfactory receptor derived skatole binding peptides and high sensitivity detection using graphene FET  
 .....○Kae Senoo<sup>1</sup>, Tharatorn Rungreunghanapol<sup>1</sup>, Chishu Homma<sup>1</sup>, Masayoshi Tanaka<sup>1</sup>,  
 Hideyuki Tomizawa<sup>2</sup>, Yoshiaki Sugizaki<sup>2</sup>, Atsunobu Isobayashi<sup>2</sup>, Yuhei Hayamizu<sup>1</sup>, Mina Okochi<sup>1</sup>  
 (<sup>1</sup> Sch. Mater. Chem. Technol., Tokyo Tech, <sup>2</sup> Toshiba Corporation)
- 16:54** 1Op16 Establishment of a cellular model for evaluating the activity of bioactive peptide Kp10 using molecular display system  
 .....○Keigo Hoshi, Ning Lin, Tetsuya Kadonosono (Tokyo Tech)
- 17:06** 1Op17 Creation and characterisation of magnetic membrane vesicles for cancer therapy by synergistic effects of immune induction and magnetic hyperthermia  
 .....○Yushi Nagasaka<sup>1</sup>, Chihiro Suzuki<sup>2</sup>, Hiroyuki Futamata<sup>1,3</sup>, Satoshi Ota<sup>1</sup>, Yosuke Tashiro<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Integr. Sci. Technol., Shizuoka Univ., <sup>2</sup> Fac. Eng. Shizuoka Univ.,  
<sup>3</sup> Res. Inst. Green Sci. Technol., Shizuoka Univ.)

**Luncheon Seminar (11:45–12:45)****Room B West Bldg. 9, W9-324****1L-B On-chip Biotechnologies Co., Ltd.****Corporate Research Seminars for Students (17:30–18:30)****Royal Blue Hall (Tokyo Tech Front)**

# September 9, 2024

**Titles in bold indicate presentations by the winners of this year's SBJ Excellent Student Award (Hishou Award).**

Time	No.	Title	Author (Affiliation)
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○=Indicates the presenter

## Award Lectures (Young Scientist Award, Young Asian Biotechnologist Prize)

### Room I West Bldg. 2, W2-401 (15:10–15:25)

15:10	2A-Ip01	<b>&lt;Young Scientist Award&gt;</b> Construction of an organ-engineered liver with decellularized liver .....○Nana Shirakigawa (Grad. Sch. Eng., Kyushu Univ.)	Chair: <b>Hideki Aoyagi</b>
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### Room D West Lecture Bldg. 1, WL1-301 (Lecture Theater) (15:10–15:25)

15:10	2A-Dp01	<b>&lt;Young Scientist Award&gt;</b> Molecular analysis and engineering of a bacterial adhesive protein for bioproduction .....○Shogo Yoshimoto (Grad. Sch. Eng., Nagoya Univ.)	Chair: <b>Yoji Hata</b>
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### Room A West Bldg. 9, Multi-Purpose Digital Hall (15:05–15:25)

15:05	2A-Ap01	<b>&lt;Young Asian Biotechnologist Prize&gt;</b> Studies on the biodegradation of xenobiotics (recalcitrant environmental pollutants and lignin) by white-rot fungi .....○Jianqiao Wang <sup>1</sup> , Hirofumi Hirai <sup>2,3,4,5</sup> ( <sup>1</sup> Sch. Environ. Sci. Eng., Guangzhou Univ., <sup>2</sup> Grad. Sch. Sci. Technol. Shizuoka Univ., <sup>3</sup> Res. Inst. Green Sci. Technol., Shizuoka Univ., <sup>4</sup> Fac. Glo. Interdiscip. Sci. Innovation, Shizuoka Univ., <sup>5</sup> Res. Inst. Mushroom Sci., Shizuoka Univ.)	Chair: <b>Hideo Nakano</b>
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## Symposium

### Room A West Bldg. 9, Multi-Purpose Digital Hall (9:00–11:00)

#### KSBB-BEST-SBJ Joint Symposium

#### (Session 1) Pioneering the Future: Advances in Engineering Biology

9:00		Opening Remarks .....Masayoshi Tanaka	Chair: <b>Jonghoon Choi</b>
9:02	2S-Aa01	From hot spring to green chemistry: The potential of <i>Cupriavidus cauae</i> PHS1 for biorefineries .....○Sung Kuk Lee (Dept. Chem. Eng., UNIST)	



			Chair: <b>Sung Kuk Lee</b>
<b>9:24</b>	2S-Aa02	Advancing the circular economy: Biorefinery of brewing waste for value-added biomolecule production ..... ○Chi-Wei (John) Lan <sup>1,2</sup> ( <sup>1</sup> Dept. Chem. Eng. & Mater. Sci., Yuan Ze Univ., <sup>2</sup> Grad. Sch. Biotechnol. Bioeng.)	
<b>9:46</b>		Break	Chair: <b>Chi-Wei Lan</b>
<b>9:54</b>	2S-Aa03	Microbiologically synthesized biomolecular electronic device ..... ○Hyun Ho Lee (Myongji Univ.)	Chair: <b>Hyun Ho Lee</b>
<b>10:16</b>	2S-Aa04	In vitro membrane protein synthesis, engineering and folding in artificial cells ..... ○Tomoaki Matsuura (Tokyo Tech)	Chair: <b>Tomoaki Matsuura</b>
<b>10:38</b>	2S-Aa05	Lectin-immobilized nanoparticles for specific binding to the cancer-specific glycan on the membrane of target cancer cells and subsequent immunotherapy of the target cells ..... ○Jonghoon Choi (Sch. Integr. Eng., Chung-Ang Univ.)	

## Room A West Bldg. 9, Multi-Purpose Digital Hall (13:00–15:00)

### KSBB-BEST-SBJ Joint Symposium

#### (Session 2) Shaping the Next Wave: Young Innovators in Engineering Biology

<b>13:00</b>		Opening Remarks ..... Masahito Hosokawa	Chair: <b>Jiyeon Bu</b>
<b>13:02</b>	2S-Ap01	Plasmonic nanostructures: From synthesis to application in clinical diagnosis ..... ○Jong Uk Lee (Dept. Chem. Eng., Suncheon National Univ.)	Chair: <b>Jong Uk Lee</b>
<b>13:24</b>	2S-Ap02	Dynamic control of microbial phenotypes and consortia in synthetic biology ..... ○Yuki Soma (BPRI, AIST)	Chair: <b>Yuki Soma</b>
<b>13:46</b>		Break	Chair: <b>Yuki Soma</b>
<b>13:54</b>	2S-Ap03	Metabolic engineering for the biological synthesis of anti-catabolic agent hydroxymethylbutyrate ..... ○Ethan I Lan (Dept. Biol. Sci. Technol., Natl. Yang Ming Chiao Tung Univ.)	Chair: <b>Ethan I Lan</b>
<b>14:16</b>	2S-Ap04	Enhancing bioproduction through peptide-tag mediated enzyme condensation ..... ○Natsuko Miura (Grad. Sch. Agric., Osaka Metro. Univ.)	Chair: <b>Natsuko Miura</b>
<b>14:38</b>	2S-Ap05	Microfluidics for Cancer Immunotherapy ..... ○Jiyeon Bu, Chaeyeon Son, Jiah Lee, Dongjun Shin, Taemin Jang, Yonghan Han, Jeong Euna, Hyun Sung Park, Jung Hyun Choi, Seha Bang, Gayoung Moon, Hosu Lee (Dept. Biol. Eng., Inha Univ.)	

## Room B West Bldg. 9, W9-324 (9:00–11:00)

### Career Symposium for PhD Students and Postdoctoral Fellows—The Future Awaits After Obtaining PhD—

9:00		Opening Remarks ..... Kei Kanie Chair: <b>Kei Kanie</b>
9:05	2S-Ba01	My career path from PhD to a researcher in a food company ..... ○Sayuri Arai (Morinaga Milk Industry Co., Ltd.)
9:20	2S-Ba02	Why I went on to a doctoral course even though I don't like research ..... ○Moyu Taniguchi (Shimadzu Corp.) Chair: <b>Koji Hashimoto</b>
9:35	2S-Ba03	How earning my Ph.D led me to choose a sales role at a world-changing venture company ..... ○Kosuke Minamihata (PeptiGrowth Inc.)
9:50	2S-Ba04	Pursuing education and research in academia ..... ○Wataru Aoki (Grad. Sch. Eng., Osaka Univ.) Chair: <b>Natsuko Miura</b>
10:05	2S-Ba05	Lessons learned from experiences at multiple research institutions ..... ○Taisuke Seike <sup>1,2</sup> ( <sup>1</sup> Grad. Sch. IST, Osaka Univ., <sup>2</sup> BDR, RIKEN)
10:20	2S-Ba06	Future opportunities from diverse career paths: postdoc in the US, industry, and startup ..... ○Atsushi Satomura (Craif Inc.) Chair: <b>Kei Kanie</b>
10:35		General Discussion ..... All Speakers
10:55		Closing Remarks ..... Natsuko Miura

## Room B West Bldg. 9, W9-324 (13:00–15:00)

### Human Resource Development Through International Genetically Engineered Machine Competition (iGEM)

		Chair: <b>Yoh-ichi Tagawa</b>
13:00	2S-Bp01	iGEM: international students competition for synthetic biology ..... ○Daisuke Kiga (Grad. Sch. Adv. Sci. Eng., Waseda Univ.) Chair: <b>Daisuke Kiga</b>
13:10	2S-Bp02	iGEM's work on environmental issues and infectious disease control ..... ○Yoh-ichi Tagawa (Sch. Life Sci. Technol, Tokyo Tech)
13:20	2S-Bp03	iGEM: Cultivating talent at the heart of Synthetic Biology Innovation ..... ○Dorothy Zhang (iGEM Foundation / iGEM Europe)
13:35	2S-Bp04	Bioengineering and the international contest: through the eyes of a high school student ..... ○Kaisei Otake (Musashi High School) Chair: <b>Yoh-ichi Tagawa</b>
13:50	2S-Bp05	Synthetic biology research, entrepreneurship, and mentoring of a high school team ..... ○Masayuki Suetsugu (Grad. Sch. Sci., Rikkyo Univ.)
14:05	2S-Bp06	Managing young researchers' associations: drawing from iGEM experiences ..... ○Luca Nishimura (IMSUT)

Chair: **Masayuki Su'etsugu**

- 14:20** 2S-Bp07 Accelerating the life sciences industry through mathematical optimization: igem experience and beyond  
.....○Taku Tsuzuki (Epistra Inc.)
- 14:35** 2S-Bp08 Challenging for innovation using award-type R&D support  
.....○Naoki Chiba, Motoshi Kunugi (METI Ind. Sci. and Tech. Pro.)
- 14:50** 2S-Bp09 Community formation led by young researchers: Lessons learned from iGEM ambassadors' activities  
.....○Rei Abe (Sch. Life Sci. Technol, Tokyo Tech)

## Room C West Lecture Bldg. 1, WL1-201 (9:00–11:00)

### New Trends in Sake Brewing - Wild Yeast, New Sterilization Technology, etc.

- 9:00** Opening Remarks  
..... Hiroyasu Onaka  
Chair: **Hiroyasu Onaka**
- 9:02** 2S-Ca01 Sake brewing with indigenous brewery yeast or wild yeast  
.....○Takeshi Akao (NRIB)  
Chair: **Takeshi Akao**
- 9:27** 2S-Ca02 Developing new products with a narrative using wild yeast  
.....○Koichi Tanaka (Fac. Health Welfare Sci., Okayama Pref. Univ.)  
Chair: **Koichi Tanaka**
- 9:47** 2S-Ca03 Development of a non-thermal sterilization method for sake using an Ultra-high pressure homogenizer  
.....○Gen-ya Arakawa (Fac. Appl. Biosci., Tokyo Univ. Agric.)
- 10:07** Break  
Chair: **Gen-ya Arakawa**
- 10:12** 2S-Ca04 Wine making by natural fermentation  
.....○Toyoichiro Shibata (Coco Farm & Winery Co.,Ltd)  
Chair: **Hiroyasu Onaka**
- 10:32** 2S-Ca05 Sake brewing with wild yeasts - isolation and breeding into product -  
.....○Hiroyasu Onaka (Gakushuin Univ.)
- 10:57** Closing Remarks  
..... Hiroyasu Onaka

## Room C West Lecture Bldg. 1, WL1-201 (13:00–15:00)

### Sustainability in Fermentation and Brewing

- 13:00** Opening Remarks  
..... Akihiro Nakamura  
Chair: **Akihiro Nakamura**
- 13:02** 2S-Cp01 Control measures against foot rot disease of sweet potato in Kirishima Shuzo Co., Ltd. – To protect the sweet potato growing area –  
.....○Takashi Fujita (Kirishima Shuzo Co., Ltd.)  
Chair: **Cho Sho**
- 13:30** 2S-Cp02 The spirit for education of people ~Inheritance to the next generation~  
.....○Masaaki Sakaguchi <sup>1,2</sup> (<sup>1</sup> Mitsubishi Corp., <sup>2</sup> Suntory Ltd.)

13:58	2S-Cp03	Incubate the sustainable human resources .....○Yumiko Yoshizaki (Fac. Agric., Kagoshima Univ.) Chair: <b>Tasuku Yamada</b>
14:26	2S-Cp04	To continue taking alcohol in stride over the long term - from a human perspective .....○Hisashi Yoshimoto (Univ. Tsukuba)
14:55		Closing Remarks ..... Tasuku Yamada

## Room D West Lecture Bldg. 1, WL1-301 (Lecture Theater) (9:00–11:00)

### Design Strategy of “Cell Factory” for High Value-Added Material Production

9:00		Opening Remarks .....Yutaka Nakashimada Chair: <b>Yutaka Nakashimada</b>
9:05	2S-Da01	Accelerated evolution of isoprenoid hyper producing bacteria .....○Daisuke Umeno (Sch. Adv. Sci. Eng., Waseda Univ.)
9:30	2S-Da02	Design of polymer factory cells based on mechanisms of biosynthesis and accumulation of polyisoprenoids .....○Seiji Takahashi (Grad. Sch. Eng., Tohoku Univ.) Chair: <b>Toru Nakayama</b>
9:55	2S-Da03	Understanding of signaling-molecule-dependent regulatory system for secondary metabolite biosynthesis and its rational control for the systematic production of useful materials .....○Kenji Arakawa (Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)
10:20	2S-Da04	The design of utility systems for cell factories that utilize anaerobic chemoautotrophs .....○Junya Kato (AIST)
10:45		Closing Remarks ..... Toru Nakayama

## Room D West Lecture Bldg. 1, WL1-301 (Lecture Theater) (13:00–15:00)

### Cutting-edge Technologies in Applied Microbiology for Green Transformation

		Chair: <b>Teppei Niide</b>
13:00		Opening Remarks ..... Akihiko Kondo
13:05	2S-Dp01	Development of DBTL technologies for bioengineering to pioneer diverse microbial functions -Our challenges in the GteX project- .....○Kohsuke Honda <sup>1,2</sup> ( <sup>1</sup> ICBiotech, Osaka Univ., <sup>2</sup> OTRI, Osaka Univ.)
13:15	2S-Dp02	Structural bioelectrochemistry of formate dehydrogenase for carbon dioxide capture and utilization .....○Keisei Sowa (Grad. Sch. Agric., Kyoto Univ.)
13:40	2S-Dp03	Mega-scale experimental analysis of protein folding stability in biology and design .....○Kotaro Tsuboyama <sup>1</sup> , Gabriel Rocklin <sup>2</sup> ( <sup>1</sup> IIS UTokyo, <sup>2</sup> Northwestern Univ.) Chair: <b>Kohsuke Honda</b>
14:05	2S-Dp04	Development of a platform for yeast synthetic biology toward realizing biomanufacturing ..... ○Jun Ishii (EGBRC, Kobe Univ.)

14:30	2S-Dp05	Development of basic strains in photosynthetic microorganisms toward low carbon bioproduction .....○Kenya Tanaka <sup>1,2</sup> , Yuichi Kato <sup>3</sup> , Tatsuya Babasaki <sup>2</sup> , Akihiko Kondo <sup>1,2,4,5</sup> , Tomohisa Hasunuma <sup>1,2,4</sup> ( <sup>1</sup> EGBRC, Kobe Univ.,, <sup>2</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ., <sup>3</sup> Fac. Eng., Toyama Pref. Univ., <sup>4</sup> CSRS, RIKENS, <sup>5</sup> Grad. Sch. Eng, Kobe Univ.)
14:55		Closing Remarks .....Kohsuke Honda

## Room E West Lecture Bldg. 1, WL1-401 (9:00–11:00)

### Precision Fermentation to Drive the Food of the Future and Bio-Production

9:00		Opening Remarks .....Jun Ogawa Chair: <b>Eiji Nagamori</b>
9:02	2S-Ea01	Bioprocess development by fermentation and microbial transformation .....○Jun Ogawa (Grad. Sch. Agric., Kyoto Univ.)
9:22	2S-Ea02	Current status and challenges of precision fermentation in the world .....○Yuji Sakamoto <sup>1,2,3</sup> ( <sup>1</sup> Japan Bioindustry Association, <sup>2</sup> Japan Association of Bioindustries Executives, <sup>3</sup> Sch. Adv. Sci. Eng., Waseda Univ.)
9:42	2S-Ea03	Industrial production of human milk oligosaccharides by microbial fermentation .....○Tetsuro Ujihara (Kyowa Hakko Bio Co., Ltd.) Chair: <b>Jun Ogawa</b>
10:02	2S-Ea04	Novel protein food made from rice and fermented with Koji .....○Kiyotaka Saga (Agro Ludens Inc.)
10:22	2S-Ea05	Mission and prospects of OIT Bio-manufacturing laboratory contributing to precision fermentation .....○Eiji Nagamori (Grad. Sch. Eng., Osaka Inst. Technol.)
10:42		General Discussion
10:57		Closing Remarks .....Eiji Nagamori

## Room E West Lecture Bldg. 1, WL1-401 (13:00–15:00)

### Food Tech Interdisciplinary Research for Food Loss Reduction and Upcycling with a Focus on Food Security

13:00		Opening Remarks .....Eiichiro Fukusaki Chair: <b>Eiichiro Fukusaki</b>
13:10	2S-Ep01	Reduction of off-flavor from food with koji mold fermentation .....○Ken-Ichi Kusumoto (Grad. Sch. Eng., Osaka Univ.)
13:35	2S-Ep02	Bioprinting of upcycled foods .....○Shinji Sakai (Grad. Sch. Eng. Sci., Osaka Univ.)
14:00	2S-Ep03	Electronics Potentials for Contributing Food Security .....○Noriyuki Miura (Grad. Sch. IST, Osaka Univ.)
14:25	2S-Ep04	Economic security and food traceability .....○Etsuyo Michida <sup>1,2</sup> ( <sup>1</sup> IDE-JETRO, <sup>2</sup> OTRI, Osaka Univ.)

14:50 Closing Remarks  
 ..... Eiichiro Fukusaki

## Room I West Bldg. 2, W2-401 (9:00–11:00)

### Innovative Biosurfactants for a Sustainable Future

9:00 Opening Remarks  
 ..... Tomotake Morita  
 Chair: **Yosuke Kobayashi**

9:05 2S-Ia01 Tailor-made production of mannosylerythritol lipids by genetic modification of producing yeast  
 ..... ○Azusa Saika (RISC, AIST)

9:31 2S-Ia02 Total Synthesis and Structure-Function Relationship Studies of Glycolipid-Type Biosurfactants  
 ..... ○Daisuke Takahashi (Fac. Sci. Tech., Keio Univ.)  
 Chair: **Tomotake Morita**

9:57 2S-Ia03 Cyclic peptide biosurfactant  
 ..... ○Masaaki Morikawa (Grad. Sch. Environ. Sci., Hokkaido Univ.)

10:23 2S-Ia04 Potential food applications of fermented plant oil extracts  
 ..... ○Hiromitsu Tabata, Emi Nakamura, Michiaki Araki, Satoshi Yoshida, Yoshihiko Hirata (Saraya)

10:39 2S-Ia05 Exploring the history and prospects of Mannosylerythritol lipids  
 ..... ○Tomohiro Sugahara (Toyobo Co., Ltd.)

10:55 Closing Remarks  
 ..... Tomotake Morita

## Room I West Bldg. 2, W2-401 (13:00–15:00)

### Bio-based Challenges Towards Carbon Resources Circulation

Chair: **Miwa Yamada**

13:00 Opening Remarks  
 ..... Daisuke Sugimori

13:05 2S-Ip01 Microbial and enzymatic degradation of a synthetic rubber and waste plastics  
 ..... ○Daisuke Sugimori (Fac. Symbio. Syst. Sci., Fukushima Univ.)

13:25 2S-Ip02 Establishment of Microbial Conversion System for Advanced Utilization of Natural Rubber  
 ..... Namiko Gibu<sup>1</sup>, Daisuke Tanikawa<sup>2</sup>, Shin Sato<sup>3</sup>, ○Daisuke Kasai<sup>4</sup>  
 (<sup>1</sup>Okinawa Natl. Coll. Technol., <sup>2</sup>Kure Natl. Coll. Technol., <sup>3</sup>Tottori Univ. Environ. Stud.,  
<sup>4</sup>Nagaoka Univ. Technol.)  
 Chair: **Daisuke Sugimori**

13:45 2S-Ip03 Microbial production of biodegradable plastics for utilization of industrial waste  
 ..... ○Miwa Yamada (Fac. Agric., Iwate Univ.)

14:05 2S-Ip04 Production of hydroxy fatty acids by the filamentous fungus *Fusarium* sp. using crude glycerol and vegetable oils  
 ..... ○Eiji Sakuradani<sup>1</sup>, Yume Shibata<sup>2</sup>, Masahiro Ibaragi<sup>2</sup>, Shiori Ikeda<sup>3</sup>, Takaiku Sakamoto<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. Technol. Ind. Soci. Sci., Tokushima Univ., <sup>2</sup>Grad. Sch. Sci. Technol. Innov. Tokushima Univ.,  
<sup>3</sup>Fac. Biosci. Bioind., Tokushima Univ.)

- 14:25 2S-Ip05 Development of microbial transformation reactions with aldehydes as intermediates and its application to resources circulation  
 .....○Jun Ogawa<sup>1</sup>, Michiki Takeuchi<sup>1,2</sup>, Akinori Ando<sup>1</sup>, Ryotaro Hara<sup>1</sup>, Shigenobu Kishino<sup>1</sup>  
 (1 Grad. Sch. Agric., Kyoto Univ., 2 Grad. Sch. Sci. Technol., Kyoto Inst. Technol.)
- 14:45 Closing Remarks  
 .....Daisuke Sugimori

## Room K Main Bldg., M-B07 (9:00–11:00)

### Biotechnology Learning from Symbiosis with Nature

- Chair: **Yutaka Tamaru**
- 9:00 2S-Ka01 Rhizosphere expansion through chemical communication between plants and endophytic fungi  
 .....○Atsushi Okazawa (Grad. Sch. Agric., Osaka Metro. Univ.)
- Chair: **Asushi Okazawa**
- 9:24 2S-Ka02 Symbiotic relationships and interactions of "Coral hosts – Endosymbiotic algae – Bacteria"  
 .....○Kako Aoyama<sup>1,2</sup>, Toshiyuki Takagi<sup>1</sup> (1 AORI, Univ. Tokyo, 2 Grad. Sch. Fro. Sci., Univ. Tokyo)
- 9:48 2S-Ka03 Interaction mechanism of *Bacillus subtilis* with plants and its development into a high protein expression system  
 .....○Kazutake Hirooka (Fac. Life Sci. Biotechnol., Fukuyama Univ.)
- Chair: **Kazutake Hirooka**
- 10:12 2S-Ka04 Microbial interaction in food fermentation  
 .....○Daisuke Watanabe (Grad. Sch. Sci. Technol., NAIST)
- Chair: **Daisuke Watanabe**
- 10:36 2S-Ka05 Root expansion through communication between plants and symbiotic bacteria  
 .....○Yutaka Tamaru<sup>1,2</sup> (1 Tohoku Univ, Green X-tec Res. Centr., 2 Grad. Sch. Eng., Tohoku Univ.)

## Room K Main Bldg., M-B07 (13:00–15:00)

### What Do “Curious” Environmental Microorganisms Eat? —Water Treatment Technology: Past and Future

- 13:00 Opening Remarks  
 .....Toshinari Maeda
- Chair: **Futoshi Kurisu**
- 13:05 2S-Kp01 Development of wastewater treatment technologies using bio-precipitation/-volatilization of soluble selenium  
 .....○Michihiko Ike (Grad. Sch. Eng., Osaka Univ.)
- 13:30 2S-Kp02 Application and challenges of bioaugmentation using degrading bacteria for VOCs-contaminated groundwater  
 .....○Yoh Takahata (Taisei Corp.)
- 13:55 Break
- Chair: **Takahiro Kato**
- 14:00 2S-Kp03 Development of statistical method for identification of microorganisms responsible for wastewater treatment  
 .....○Toshikazu Fukushima (NIPPON STEEL CORPORATION)
- 14:25 2S-Kp04 Metabolic Networks in a Microbial Community -Competition, Cooperation and System Stability-  
 .....○Kenshi Suzuki (Grad. Sch. Agric. Life Sci., Univ. Tokyo)

14:50	Closing Remarks	.....Masaaki Morikawa
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## Room N Main Bldg., M-124 (13:00–15:00)

### Frontline of Standardization for the Cell Manufacturing Industry

13:00	Introduction	.....Ruji Kato Chair: <b>Ryuji Kato</b>
13:02	2S-Np01 Standards and Japanese standardization strategy	.....○Ikuro Kawauchi <sup>1,2</sup> ( <sup>1</sup> FUJIFILM Holdings Corp., <sup>2</sup> Forum for Innovative Regenerative Medicine) Chair: <b>Ikuro Kawauchi</b>
13:21	2S-Np02 Standardization for the industrialization of cell manufacturing	.....○Ryuji Kato (Grad. Sch. Pharm. Sci., Nagoya Univ.)
13:40	2S-Np03 Cell Characterization and Testing	.....○Yuzuru Ito (Grad. Sch. Life Environ. Sci., Univ. Tsukuba)
13:59	2S-Np04 Cell counting and viability	.....○Masakazu Kadowaki (Sysmex Corporation) Chair: <b>Ryuji Kato</b>
14:18	2S-Np05 International standards for industries related to regenerative medicine	.....○Tetsunori Matsumoto (Shiseido Co., Ltd.)
14:37	Panel discussion: Interpreting "Standards" through Practical Interpretation Examples via Q&A	

## Room O Main Bldg., M-178 (9:00–11:00)

### Frontiers of Data-driven Functional Bio-Tools

9:00	Opening Remarks	.....Tamotsu Zako Chair: <b>Tamotsu Zako</b>
9:02	2S-Oa01 A tool for obtaining single-cell image data on immunocytotoxicity against cancer cells	.....○Satoshi Yamaguchi (SANKEN, Osaka Univ.)
9:25	2S-Oa02 Development of AI technology for therapeutic drug discovery using 'cell morphology'	.....○Ryuji Kato (Grad. Sch. Pharm. Sci., Nagoya Univ.) Chair: <b>Noriho Kamiya</b>
9:48	2S-Oa03 Machine-learning-guided directed evolution of molecular binding proteins	.....○Tomoyuki Ito <sup>1</sup> , Sakiya Kawada <sup>1</sup> , Hikaru Nakazawa <sup>1</sup> , Mitsuo Umetsu <sup>1,2</sup> ( <sup>1</sup> Grad. Sch. Eng., Tohoku Univ., <sup>2</sup> RIKEN, AIP)
10:11	2S-Oa04 Molecular detection using classification of nanoparticles by machine learning	.....○Tamotsu Zako (Grad. Sch. Sci. Eng., Ehime Univ.)
10:34	2S-Oa05 Food texture analysis and creation based on deep learning	.....○Makoto Takemasa (Grad. Sch. Sci. Eng. Tokyo Denki Univ.)
10:57	Closing Remarks	.....Noriho Kamiya



## Room O Main Bldg., M-178 (13:00–15:00)

### Current Status and Future Prospects of Biomanufacturing for Solving Social Issues

13:00		Opening Remarks ..... Takaomi Yasuhara Chair: <b>Takaomi Yasuhara</b>
13:03	2S-Op01	Overview of Japan's Bioeconomy strategy ..... ○Daisuke Sato (Secretariat of Science, Technology and Innovation Policy, Cabinet Office) Chair: <b>Satoshi Yoshida</b>
13:24	2S-Op02	Current status of fermentation technology research ..... ○Yoshihiko Hara (Res. Inst. Biosci. Prod. Fine Chem., Ajinomoto Co., Inc.)
13:55	2S-Op03	Direction of social impact measurement and management in the biomanufacturing sector: ghg+ integrated social value assessment ..... ○Tomokazu Ohtani (Mizuho Financial Group, Inc.) Chair: <b>Shintaro Iwatani</b>
14:26	2S-Op04	The use of Generative AI/machine learning in the research domain and global case studies ..... ○Fumihiko Kimura (Dataiku)
14:57		Closing Remarks ..... Shintaro Iwatani

## Oral Presentations

### Room A West Bldg. 9, Multi-Purpose Digital Hall (15:30–17:30)

#### 【Biomedical Engineering; Cell and Tissue Engineering】

15:30	2Ap01	Fabrication of a mechanical stimulation system by magnetic pillar for skeletal muscle-like tissues ..... ○Daiyuu Oguri <sup>1</sup> , Ryosuke Iwai <sup>2</sup> , Takeshi Moriwaki <sup>1</sup> ( <sup>1</sup> Grad. Sch. Sci. Eng., Hirosaki Univ., <sup>2</sup> Inst. Front. Sci. Tech., Okayama Univ. Sci.)
15:42	2Ap02	〈Topics〉 Formation of migrasome-like vesicles induced by hypoosmotic stress ..... ○Koki Yoshikawa, Shogo Saito, Masayoshi Tanaka, Mina Okochi (Sch. Mater. Chem. Technol., Tokyo Tech)
15:54	2Ap03	Analysis of antibody transport pathway from Golgi apparatus to plasma membrane in CHO cells ..... ○Shuhei Mitoma <sup>1</sup> , Chiato Yoshiike <sup>1</sup> , Yu Tsunoda <sup>1</sup> , Noriko Yamano-Adachi <sup>1,2</sup> , Takeshi Omasa <sup>1,2</sup> ( <sup>1</sup> Grad. Sch. Eng., Osaka Univ., <sup>2</sup> OTRI, Osaka Univ.)
16:06	2Ap04	〈Topics〉 Analysis of genome shuffling effects using single cell analysis ..... ○Koki Mizuno <sup>1</sup> , Kazue Kimura <sup>1</sup> , Kenjiro Tanaka <sup>1</sup> , Akinori Ikeuchi <sup>2,3</sup> , Nobuhiko Muramoto <sup>2</sup> , Ryuji Kato <sup>1,4</sup> ( <sup>1</sup> Grad. Sch. Pharm. Sci., Nagoya Univ., <sup>2</sup> Toyota Cent. R&D Labs. Inc., <sup>3</sup> Toyota Motor Corp., <sup>4</sup> Inst. of Nano-Life-Syst., Nagoya Univ.)
16:18	2Ap05	Quality analysis of fibroblast spheroids by near-infrared imaging ..... ○Ren Sakai <sup>1</sup> , Miya Kawasaki <sup>1</sup> , Yoko Igarashi <sup>2</sup> , Hiroshi Suganuma <sup>2</sup> , Kenjiro Tanaka <sup>1</sup> , Ryuji Kato <sup>1,3</sup> ( <sup>1</sup> Grad. Sch. Pharm. Sci., Nagoya Univ., <sup>2</sup> Sumitomo Electric Industries, Ltd., <sup>3</sup> Inst. of Nano-Life-Syst., Nagoya Univ.)

- 16:30** Break
- 16:42** 2Ap06 Development of dual redox-active polymers for cancer therapy  
 ..... ○Yuki Ogawa, Akira Ito, Masahiro Kaneko (Grad. Sch. Eng., Nagoya Univ.)
- 16:54** 2Ap07 Preparation of keratin films mixed with glycosaminoglycans for use in cell culture  
 ..... ○Rinku Nakagawa, Hideki Mori, Masayuki Hara (Grad. Sch. Sci., Osaka Metro. Univ.)
- 17:06** 2Ap08 Development of transgenic chickens by cell engineering of primordial germ cells  
 ..... ○Yuya Kaneko<sup>1</sup>, Nana Shirakigawa<sup>1</sup>, Yoshinori Kawabe<sup>1</sup>,  
 Ken-ichi Nishijima<sup>2</sup>, Masamichi Kamihira<sup>1</sup>  
 (<sup>1</sup>Fac. Eng., Kyushu Univ., <sup>2</sup>Grad. Schl. Bioagr. Sci., Nagoya Univ.)
- 17:18** 2Ap09 Morphology-based informatics for evaluating the single cell mutation effect on cellular senescence  
 ..... ○Kenjiro Tanaka<sup>1</sup>, Koki Sakaguchi<sup>1</sup>, Kazue Kimura<sup>1</sup>, Kei Kanie<sup>2</sup>, Ryuji Kato<sup>1,3</sup>  
 (<sup>1</sup>Grad. Sch. Pharm. Sci., Nagoya Univ., <sup>2</sup>Dept. Biotechnology and Chemistry, Kindai Univ.,  
<sup>3</sup>Inst. of Nano-Life-Syst., Nagoya Univ.)

## Room B West Bldg. 9, W9-324 (15:30–16:30)

### 【Plant Cell / Tissue Engineering】

- 15:30** 2Bp01 Cadmium removal from contaminated soil using plants and electrical grounding  
 ..... ○Gyu Won Lee<sup>1</sup>, Jeong Wook Jo<sup>1</sup>, Jae Hun Kim<sup>1</sup>, Ye Jin Kim<sup>1</sup>,  
 Yi Ryung Kim<sup>2</sup>, Hyung Joo Kim<sup>1</sup>  
 (<sup>1</sup>Dept. Biological Eng., Konkuk Univ.,  
<sup>2</sup>Dept. Stem Cell and Regenerative Biotechnol., Coll. Konkuk. Inst. Technol., Konkuk Univ.)
- 15:42** 2Bp02 Effect of electromagnetic fields stimulation on early stages of plant seed germination  
 ..... ○Jeong Wook Jo<sup>1</sup>, Gyu Won Lee<sup>1</sup>, Jae Hun Kim<sup>1</sup>, Ye Jin Kim<sup>1</sup>,  
 Yi Ryung Kim<sup>2</sup>, Hyung Joo Kim<sup>1</sup>  
 (<sup>1</sup>Dept. Biological Eng., Konkuk Univ.,  
<sup>2</sup>Dept. Stem Cell and Regenerative Biotechnol., Coll. Konkuk. Inst. Technol., Konkuk Univ.)
- 15:54** 2Bp03 Search for modulators of K<sup>+</sup> channel activity to control plant growth  
 ..... ○Koya Omura<sup>1</sup>, Kanane Sato<sup>1</sup>, Haruka Taketa<sup>1</sup>, Ken-ichiro Hayashi<sup>2</sup>,  
 Mieko Arisawa<sup>3</sup>, Masaru Tsujii<sup>1</sup>, Yasuhiro Ishimaru<sup>1</sup>, Nobuyuki Uozumi<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. Eng., Tohoku Univ., <sup>2</sup>Fac. Sci., Okayama Univ. Sci., <sup>3</sup>Grad. Sch. Agric., Kyushu Univ.)
- 16:06** 2Bp04 <Topics>  
 Single-cell level root hair RNA-seq to elucidate the microbial infection mechanism  
 ..... ○Qianya Su<sup>1</sup>, Hiroko Matsunaga<sup>2,3</sup>, Samuel Ashok<sup>2</sup>, Misato Okudaira<sup>2</sup>,  
 Hidefumi Hamasaki<sup>4</sup>, Minami Matsui<sup>4,5</sup>, Haruko Takeyama<sup>1,2,3,6</sup>  
 (<sup>1</sup>Grad. Sch. Adv. Sci. Eng., Waseda Univ., <sup>2</sup>Res. Org. Nano Life Innov., Waseda Univ.,  
<sup>3</sup>CBBD-OIL, AIST-Waseda Univ., <sup>4</sup>CSRS, RIKENS, <sup>5</sup>Kihara Inst. Biol. Res., Yokohama City Univ.,  
<sup>6</sup>Inst. Adv. Res. Biosyst. Dynam., Waseda Res. Inst. Sci. Eng., Waseda Univ.)
- 16:18** 2Bp05 The "New Green Revolution" through genomics-based breeding of high-yielding Super Koshihikari  
 ..... ○Motonori Tomita, Kouhei Nakayama, Kakeru Fujita  
 (Res. Inst. Green Sci. Technol., Shizuoka Univ.)

## Room C West Lecture Bldg. 1, WL1-201 (15:30–17:30)

### 【Taxonomy, Phylogenetics; Genetic Engineering; Invited Lecture】

- 15:30 2Cp01 <Invited Lecture>  
Genomic Structural Variants of Multidrug Resistant *Salmonella enterica* serovar Kentucky  
.....○Prasit Palittapongarnpim<sup>1</sup>, Rattanaporn Intuy<sup>1</sup>, Sirirak Supa-Amornkul<sup>2</sup>, Soraya Chaturongakul<sup>3</sup>  
(<sup>1</sup>Pornchai Matangkasombut Center for Microbial Genomics, Dept. Microbiol., Fac. Sci., Mahidol Univ., Thailand, <sup>2</sup>Dept. Oral Microbiol., Fac. Dent., Mahidol Univ., Thailand, <sup>3</sup>Institute of Molecular Biosciences, Mahidol Univ., Thailand)
- 15:54 2Cp03 Identification of peptidase mRNAs degraded by the endoplasmic reticulum stress dependent mRNA decay in *Aspergillus oryzae*  
.....○Mizuki Tanaka, Youhei Yamagata (Grad. Sch. Agric., Tokyo Univ. Agric. Technol.)
- 16:06 2Cp04 Transcriptional analysis of cyanobacteria alkane biosynthesis genes, mRNA structure prediction and production enhancement by recombinant strain  
.....○Misato Nagao<sup>1,3</sup>, Takato Ozaki<sup>1</sup>, Hirohumi Fukuda<sup>1</sup>, Yu Kanesaki<sup>2</sup>, Munehiko Asayama<sup>1,3</sup>  
(<sup>1</sup>Dept. Food and Life Sci., Coll. Agric., Ibaraki Univ., <sup>2</sup>Res. Inst. Green Sci. Technol., Shizuoka Univ., <sup>3</sup>United Grad. Sch. Agric. Sci., Tokyo Univ. Agric. Technol.)
- 16:18 2Cp05 Analysis for surviving cells appeared with induction of excision of centromeric DNA from a chromosome in *Saccharomyces cerevisiae*  
.....○Hiroaki Matsuzaki, Yuma Nakamura, Sumire Shintani (Fac. Life Sci. Biotechnol., Fukuyama Univ.)
- 16:30 Break
- 16:42 2Cp06 Enhancement of flow of artificial metabolic pathways by adaptive laboratory evolution in coryneform bacteria  
..... Genta Inokuchi<sup>1</sup>, Keisuke Yamamoto<sup>2</sup>, ○Takashi Hirasawa<sup>1</sup>  
(<sup>1</sup>Sch. Life Sci. Technol, Tokyo Tech, <sup>2</sup>Green Earth Institute Co., Ltd.)
- 16:54 2Cp07 Relationship between increased gene expression of *odhI* gene and glutamate production in *Corynebacterium glutamicum*  
.....○Tsubasa Miyauchi, Takashi Hirasawa (Sch. Life Sci. Technol, Tokyo Tech)
- 17:06 2Cp08 Search for sequence features that are excellent for RNA stabilization  
.....○Akihito Takazawa<sup>1</sup>, Hitomi Nakamae<sup>1</sup>, Makiko Furuta<sup>1</sup>, Shotaro Yamasaki<sup>1,2</sup>, Ko Kato<sup>1,3</sup>  
(<sup>1</sup>Grad. Sch. Biol. Sci., NAIIST, <sup>2</sup>OUBIC, RIMD, Osaka Univ., <sup>3</sup>CDG, NAIIST)
- 17:18 2Cp09 Genome-wide high-resolution analysis of mRNA translation in several plant species  
.....○Ibnu Halim<sup>1</sup>, Makiko Furuta<sup>1</sup>, Shuto Takahashi<sup>1</sup>, Shotaro Yamasaki<sup>1,2</sup>, Ko Kato<sup>1,3</sup>  
(<sup>1</sup>Nara Inst of Sci and Technol, Grad Sch of Adv Sci, and Technol Bioscience Div, Bioeng Lab., <sup>2</sup>Osaka University, Res Inst for Microbial Diseases, Bioinformatics Center, Biological Informatics., <sup>3</sup>Nara Inst of Sci and Technol, Center for Digital Green-innovation.)

## Room D West Lecture Bldg. 1, WL1-301 (Lecture Theater) (15:30–17:30)

### 【Metabolic Engineering】

- 15:30 2Dp01 Regulating the monomer composition of polyhydroxyalkanoate synthesized from methanol by transcriptional switch  
.....○Yume Ishii, Ayumu Hirayama, Izumi Orita, Tosiaki Fukui (Sch. Life Sci. Technol, Tokyo Tech)

- 15:42** 2Dp02 <Topics>  
Biosynthesis of polyhydroxyalkanoates containing amino acid-derived 2-hydroxyalkanoate units by engineered *Ralstonia eutropha*  
..... ○Shizuru Ishihara<sup>1</sup>, Izumi Orita<sup>1</sup>, Ken'ichiro Matsumoto<sup>2</sup>, Toshiaki Fukui<sup>1</sup>  
(<sup>1</sup> Sch. Life Sci. Technol, Tokyo Tech, <sup>2</sup> Grad. Sch. Eng., Hokkaido Univ.)
- 15:54** 2Dp03 Effects of heterologous phosphoketolase implementation on CO<sub>2</sub> fixation and PHB production by *Cupriavidus necator* H16  
..... ○Naoki Abekawa<sup>1</sup>, Kouhei Kamasaka<sup>2</sup>, Keiji Matsumoto<sup>2</sup>, Koji Takeda<sup>2</sup>,  
Ryota Hidese<sup>2</sup>, Shunsuke Sato<sup>4</sup>, Akihiko Kondo<sup>1,2,3</sup>, Tomohisa Hasunuma<sup>1,2,3</sup>  
(<sup>1</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ., <sup>2</sup> EGBRC, Kobe Univ., <sup>3</sup> CSRS, RIKENS, <sup>4</sup> Kaneka Corp.)
- 16:06** 2Dp04 Effect of CO<sub>2</sub> on the physiological state of *Akkermansia muciniphila*  
..... ○Mitsuki Sakurai<sup>1</sup>, Syuya Ogiwara<sup>2</sup>, Keisuke Kurita<sup>1</sup>, Ren Osawa<sup>3</sup>,  
Megumi Koizumi<sup>3</sup>, Takumi Sato<sup>1,3</sup>  
(<sup>1</sup> Grad. Sch. Mol. Microbiol., Tokyo Univ. Agric., <sup>2</sup> Grad. Sch. Biosci., Tokyo Univ. Agric.,  
<sup>3</sup> Dept. Mol. Microbiol., Tokyo Univ. Agric.)
- 16:18** 2Dp05 <Topics>  
Improving ethanol production from gaseous substrates by redesigning metabolism in *Moorella thermoacetica*  
..... ○Junya Kato<sup>1,2</sup>, Yuichi Kuwada<sup>1</sup>, Kaisei Takemura<sup>1</sup>, Setsu Kato<sup>1</sup>, Tatsuya Fujii<sup>2</sup>, Keisuke Wada<sup>2</sup>,  
Masahiro Watanabe<sup>2</sup>, Yusuke Nakamichi<sup>2</sup>, Yoshiteru Aoi<sup>1</sup>, Tomotake Morita<sup>2</sup>, Katsuji Murakami<sup>2</sup>,  
Yutaka Nakashimada<sup>1</sup>  
(<sup>1</sup> Grad. Sch. Integr. Sci. Life, Hiroshima Univ., <sup>2</sup> AIST)
- 16:30** Break
- 16:42** 2Dp06 Investigation of functional properties of *Streptomyces* strains cultivated in plant-based medium  
..... ○Narandalai Danshiitsoodol, Masafumi Noda, Masanori Sugiyama  
(Grad. Sch. Biomed. Health. Sci, Hiroshima Univ.)
- 16:54** 2Dp07 Bioproduction of aromatic compounds by water-organic solvent biphasic culture using organic solvent tolerant microorganism as host  
..... ○Hiroshi Toda, Tamotsu Kanai (Fac. Eng., Toyama Pref. Univ.)
- 17:06** 2Dp08 Metabolic optimization design based on flux balance analysis to improve bioproductivity in *Bacillus subtilis*  
..... ○Nunthaphan Vikromvarasiri<sup>1</sup>, Tomokazu Shirai<sup>1</sup>, Akihiko Kondo<sup>1,2</sup>  
(<sup>1</sup> CSRS, RIKENS, <sup>2</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ.)
- 17:18** 2Dp09 <Topics>  
Precise microbiome engineering using bacteriophages to control the function of microbiomes  
..... ○Tomoki Tanaka<sup>1</sup>, Ryoga Sugiyama<sup>1</sup>, Manami Kawaguchi<sup>1</sup>, Hiroaki Iwaki<sup>2</sup>, Kenji Okano<sup>2</sup>  
(<sup>1</sup> Grad. Sch. Sci. Eng., Kansai Univ., <sup>2</sup> Fac. Chem. Mater. Bioeng., Kansai Univ.)

## Room E West Lecture Bldg. 1, WL1-401 (15:30–17:06)

### 【Fermentation Physiology, Fermentation Technology】

- 15:30** 2Ep01 Establishment of unnatural cyclic peptide fermentation platform for RiPP drug discovery  
..... ○Shinta Ijichi<sup>1</sup>, Emiko Nagai<sup>2</sup>, Shotaro Hoshino<sup>1</sup>, Shumpei Asamizu<sup>3</sup>,  
Alexander A. Vinogradov<sup>4</sup>, Yuki Goto<sup>4,5</sup>, Hiroaki Suga<sup>4</sup>, Hiroyasu Onaka<sup>1</sup>  
(<sup>1</sup> Grad. Sch. Sci., Gakushuin Univ., <sup>2</sup> AEEM, <sup>3</sup> EGBRC, Kobe Univ., <sup>4</sup> Grad. Sch. Sci., Univ. Tokyo,  
<sup>5</sup> Grad. Sch. Sci., Kyoto Univ.)

- 15:42 2Ep02 Production of rare sugar D-ribulose by *Streptomyces lividans*  
 ..... ○Kentaro Nakazawa<sup>1</sup>, Akari Nakahama<sup>1</sup>, Shogo Yamamoto<sup>2</sup>, Yota Tsuge<sup>1,3</sup>  
 (1 Grad. Sch. Nat. Sci. Technol., Kanazawa Univ., 2 Nagase & Co., Ltd, 3 InFiniti, Kanazawa Univ.)
- 15:54 2Ep03 Production of a UV absorbent by engineered *Streptomyces lividans*  
 ..... ○Shotaro Arai<sup>1</sup>, Akari Nakahama<sup>1</sup>, Yuko Taniguchi<sup>2</sup>, Shogo Yamamoto<sup>2</sup>, Yota Tsuge<sup>1,3</sup>  
 (1 Grad. Sch. Nat. Sci. Technol., Kanazawa Univ., 2 Nagase & Co., Ltd, 3 InFiniti, Kanazawa Univ.)
- 16:06 2Ep04 Development of a selective high production system of monascin  
 ..... ○Shosuke Matsuura, Riku Mitsude, Shinobu Oda  
 (Genome Biotechnol. Lab., Kanazawa Inst. Technol.)
- 16:18 2Ep05 Production of poly-hydroxybutyrate (PHB) by *Ralstonia eutropha* and its recombinant strain from various carbon sources  
 ..... ○Hana Nadhifah<sup>1</sup>, Atsuki Kano<sup>2</sup>, Tzu-Yu Chen<sup>3</sup>, Prihardi Kahar<sup>1</sup>,  
 Yutaro Mori<sup>1</sup>, Chiaki Ogino<sup>1</sup>  
 (1 Dept. Chem. Eng., Grad. Sch. Eng., Kobe Univ., 2 Dept. Chem. Eng., Fac. Eng., Kobe Univ.,  
 3 Dept. Chem. Eng., Yuan Ze Univ.)
- 16:30 Break
- 16:42 2Ep06 Autotrophic biosynthesis of polyhydroxyalkanoate using hydrogen-oxidizing bacterium *Ralstonia eutropha*  
 ..... ○Yuki Miyahara, Chih-Ting Wang, Takeharu Tsuge (Sch. Mater. Chem. Technol., Tokyo Tech)
- 16:54 2Ep07 5-ketogluconic acid production using quinoprotein glycerol dehydrogenase modified to chelate-resistant from acetic acid bacteria  
 ..... ○Risa Kaneda, Yoshitaka Ano (Fac. Agric., Ehime Univ.)

## Room F West Bldg. 3, W3-301 (15:30–17:30)

### 【Enzymology, Enzyme】

- 15:30 2Fp01 Development of a new diagnostic enzyme by rational alteration of lactate dehydrogenase  
 ..... ○Momoka Nakamura, Yoshiaki Nishiya (Grad. Sch. Sci. Eng., Setsunan Univ.)
- 15:42 2Fp02 Identification of catalytic residues of aconitate isomerase derived from *Pseudomonas* sp. WU-0701 based on conserved amino acid sequences and predicted three-dimensional structure  
 ..... ○Maki Kobayashi<sup>1</sup>, Yoshitaka Ishii<sup>2</sup>, Kohtaro Kirimura<sup>1,2</sup>  
 (1 Dept. Appl. Chem., Fac. Sci. Eng., Waseda Univ., 2 Res. Inst. Sci. Eng, Waseda Univ.)
- 15:54 2Fp03 Structure-based discovery and engineering of pyridoxal 5'-phosphate (PLP)-dependent oxidase variants  
 ..... Noriyuki Shioura<sup>1</sup>, Satoshi Yuzawa<sup>1</sup>, Qian Han<sup>2</sup>, ○Christopher J. Vavricka<sup>1</sup>  
 (1 Dept. Biotechnol. Life Sci., Tokyo Univ. Agric. Technol., 2 Sch. Life Sci., Hainan Univ.)
- 16:06 2Fp04 <Topics>  
 Engineering of L-glutamate oxidase for electrochemical biosensor  
 ..... ○Keitaro Kuze, Keita Toda, Atsushi Ichianagi (Kikkoman Corp.)
- 16:18 2Fp05 Prediction and demonstration of amino acid residues determining substrate specificity of enzymes  
 ..... ○Seiya Mori, Yoshihiro Toya, Hiroshi Shimizu, Teppei Niide (Grad. Sch. IST, Osaka Univ.)
- 16:30 Break
- 16:42 2Fp06 High production and thermostabilization of bilirubin oxidase from *Myrothecium verrucaria* in *Aspergillus* sp.  
 ..... ○Haruka Kado<sup>1,2</sup>, Hironori Semba<sup>1</sup>, Shohei Yamada<sup>1</sup>, Hirokazu Tsuboi<sup>1</sup>, Takayuki Bogaki<sup>1</sup>,  
 Akio Kouda<sup>1</sup>, Kazuhiko Ishikawa<sup>3</sup>, Yutaro Mori<sup>4</sup>, Chiaki Ogino<sup>4</sup>, Masahiro Takagi<sup>2,5</sup>, Yoshio Tsujino<sup>1,2,5</sup>  
 (1 Gen. Res. Lab., Ozeki Corp., 2 Grad. Sch. Sci. Technol. Innov., Kobe Univ.,  
 3 Matsutani Chemical Ind. Co., Ltd., 4 Fac. Eng., Kobe Univ., 5 Sch. Mater. Sci., JAIST)

- 16:54** 2Fp07 Screening of bacterial hemoproteins for the stereo-divergent synthesis of cyclopropanes  
 .....○Shunsuke Kato, Koki Takeuchi, Takashi Hayashi (Grad. Sch. Eng., Osaka Univ.)
- 17:06** 2Fp08 Creation of a D-histidine-specific oxidase by modifying the substrate specificity of a yeast D-aspartate oxidase  
 .....○Sota Zaitu, Shouji Takahashi (Grad. Sch. Eng. Nagaoka Univ. Technol.)
- 17:18** 2Fp09 Enhanced thermostability of aryl-carboxylesterase EstAC by introduction of disulfide bonds  
 .....○Saho Azuma, Ryosuke Maruyama, Katsunori Sugiyama, Munenori Takehara  
 (Dept. Mater. Sci., Grad. Sch. Eng., Univ. Shiga Pref.)

## Room G West Bldg. 3, W3-201 (15:30–17:30)

### 【Proteins】

- 15:30** 2Gp01 Fundamental investigation for the creation of ultra-large artificial biomacromolecular assemblies composed of fibrous proteins  
 .....○Ayasa Nagatani<sup>1</sup>, Kosuke Minamihata<sup>1</sup>, Masahito Ishikawa<sup>2</sup>, Shogo Yoshimoto<sup>3</sup>,  
 Katsutoshi Hori<sup>3</sup>, Noriho Kamiya<sup>1,4</sup>  
 (<sup>1</sup>Grad. Sch. Eng., Kyushu Univ., <sup>2</sup>Dept. Biosci., Nagahama Inst. Bio-Sci. Technol.,  
<sup>3</sup>Grad. Sch. Eng., Nagoya Univ., <sup>4</sup>CFC, Kyushu Univ.)
- 15:42** 2Gp02 Autoclave sterilization resistance of autoantibody adsorbents using whole antigen proteins as ligands  
 .....○Eri Kurozumi, Midori Futami (Grad. Sch. Sci. Eng., Okayama Univ. Sei.)
- 15:54** 2Gp03 <Topics>  
 Development of a comprehensive quantitative evaluation system for autoantibody biomarkers, and improvement of cancer identification ability using machine learning  
 .....○Ai Miyamoto<sup>1</sup>, Takeru Mori<sup>1</sup>, Mirei Date<sup>1</sup>, Tomoko Honjo<sup>1</sup>,  
 Kadoaki Ohashi<sup>2</sup>, Katsuyuki Kiura<sup>2</sup>, Kazuhiro Kakimi<sup>3</sup>, Junichiro Futami<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. ISEHS., Okayama Univ., <sup>2</sup>Grad. Sch. Med. Dent. Pharm. Sci., Okayama Univ.,  
<sup>3</sup>Grad. Sch. Med., Kindai Univ.)
- 16:06** 2Gp04 Linear epitope-specific autoantibody discovery method and improved autoantibody assaying system  
 .....○Mirei Date<sup>1</sup>, Tsugumi Shiokawa<sup>2</sup>, Hiroko Tada<sup>2</sup>, Takeru Mori<sup>1</sup>,  
 Tomoko Honjo<sup>1</sup>, Ai Miyamoto<sup>1</sup>, Junichiro Futami<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. ISEHS., Okayama Univ., <sup>2</sup>Dept. Inst. Anal., Okayama Univ.)
- 16:18** 2Gp05 Effect of olfactory receptor OR7C1 on colorectal cancer stemness  
 .....○Kaoru Hashimoto<sup>1</sup>, Suzuna Koza<sup>1</sup>, Norio Takei<sup>3</sup>, Yoshihiko Hirohashi<sup>2</sup>,  
 Toshihiko Torigoe<sup>2</sup>, Masafumi Yohda<sup>1</sup>, Yosuke Fukutani<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. Eng., Tokyo Univ. Agric. Technol., <sup>2</sup>Sch. Med., Sapporo Medical Univ.,  
<sup>3</sup>Inst. of Animal Exp., Faculty of Med. Hokkaido Univ.)
- 16:30** Break
- 16:42** 2Gp06 Functional comparative analysis of lower aldehyde-recognizing olfactory receptors conserved across diverse animal species  
 .....○Haruto Kudo, Reina Kanemaki, Masafumi Yohda, Yosuke Fukutani  
 (Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)
- 16:54** 2Gp07 The role of a conserved proline residue of human odorant receptors responding to sulfur-containing molecules  
 .....○Yumika Ono, Haruka Siato, Masashi Abe, Masafumi Yohda, Yosuke Fukutani  
 (Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)

- 17:06** 2Gp08 **Energy dependent secretion of levansucrase of *Gluconobacter* sp.**  
 .....○Riku Yamashita<sup>1</sup>, Naoya Kataoka<sup>2,3</sup>, Morio Ishikawa<sup>4</sup>, Minenosuke Matsutani<sup>5</sup>,  
 Uraivan Tippayasak<sup>6</sup>, Gunjana Theeragool<sup>6</sup>, Kazunobu Matsushita<sup>7</sup>, Toshiharu Yakushi<sup>2,3</sup>  
 (¹ Grad. Sch. Sci. Tech. Innov., Yamaguchi Univ., ² Org. Res. Initiatives, Yamaguchi Univ.,  
 ³ RCTMR, Yamaguchi Univ., ⁴ Fac. Appl. Biosci., Tokyo Univ. Agric., ⁵ NODAI Genome, Tokyo Univ. Ag.,  
 ⁶ Fac. Sci., Kasetsart Univ., ⁷ Fac. Agric., Yamaguchi Univ.)
- 17:18** 2Gp09 Structural analysis of bacterial flagellar motor MS ring made of fusion protein of FliF and FliG by cryo-electron microscopy  
 .....Norihiro Takekawa<sup>1</sup>, Tatsuro Nishikino<sup>2,3</sup>, Jun-ichi Kishikawa<sup>3,4</sup>, Mika Hirose<sup>3</sup>, Miki Kinoshita<sup>5</sup>,  
 Seiji Kojima<sup>6</sup>, Toru Minamino<sup>5</sup>, Takayuki Uchihashi<sup>7,8</sup>,  
 Takayuki Kato<sup>3</sup>, Katsumi Imada<sup>1</sup>, ○Michio Homma<sup>9</sup>  
 (¹ Grad. Sch. Sci., Osaka Univ., ² Grad. Sch. Eng., Nagoya Inst. Technol., ³ Inst. Protein Res., Osaka Univ.,  
 ⁴ Grad. Sch. Sci. Technol., Kyoto Inst. Technol., ⁵ Grad. Sch. Frontier Biosci., Osaka Univ.,  
 ⁶ Grad. Sch. Sci., Bio. Sci., Nagoya Univ., ⁷ Grad. Sch. Sci., Physics, Nagoya Univ., ⁸ ExCELLS,  
 ⁹ Grad. Sch. Eng., Nagoya Univ.)

## Room H West Bldg. 3, W3-207 (15:30–17:18)

### 【Proteins】

- 15:30** 2Hp01 Multiplex analysis of target metabolites using metabolite sensors  
 .....○Yoshiki Takemura<sup>1</sup>, Yuki Kimura<sup>2</sup>, Daisuke Umeno<sup>2</sup>  
 (¹ Grad. Sch. Adv. Sci. Eng., Waseda Univ., ² Sch. Adv. Sci. Eng., Waseda Univ.)
- 15:42** 2Hp02 Redesigning substrate specificity of betaine synthase through screening for substrate induced stabilization  
 .....○Haruki Uryu<sup>1</sup>, Yuki Kimura<sup>2</sup>, Daisuke Umeno<sup>2</sup>  
 (¹ Grad. Sch. Adv. Sci. Eng., Waseda Univ., ² Sch. Adv. Sci. Eng., Waseda Univ.)
- 15:54** 2Hp03 Protein-based biosensors for monitoring of cellular membrane fluidity  
 .....○Takahiro Seki<sup>1</sup>, Daisuke Umeno<sup>1,2</sup> (¹ WISE, Waseda Univ., ² Sch. Adv. Sci. Eng., Waseda Univ.)
- 16:06** 2Hp04 Artificial trans-membrane signal transduction systems based on ligand-induced  
 .....○Kayo Takemoto<sup>1</sup>, Kotoha Tanaka<sup>1</sup>, Takahiro Seki<sup>2</sup>, Daisuke Umeno<sup>3</sup>  
 (¹ Grad. Sch. Adv. Sci. Eng., Waseda Univ., ² WISE, Waseda Univ., ³ Sch. Adv. Sci. Eng., Waseda Univ.)
- 16:18** 2Hp05 Yeast extract and peptone are responsible for pET expression in LB medium without IPTG  
 .....○Mikiko Nakamura<sup>1</sup>, Rinji Akada<sup>2</sup> (¹ Dept. Inst. Anal., Shinshu Univ.,  
 ² Dept. Appl. Chem., Yamaguchi Univ.)
- 16:30** Break
- 16:42** 2Hp06 Accurate prediction of asymmetric folding reactions for a symmetric protein  
 .....○Runjing Liu<sup>1</sup>, Koji Ooka<sup>2</sup>, Munehito Arai<sup>1,2,3</sup>  
 (¹ Grad. Sch. Arts Sci., Univ. Tokyo, ² Coll. Arts Sci., Univ. Tokyo, ³ Grad. Sch. Sci., Univ. Tokyo)
- 16:54** 2Hp07 Generative artificial intelligence-based design of scaled-down protein  
 .....○Taizo Hanai<sup>1</sup>, Tamon Matsuzawa<sup>2</sup>, Yuki Soma<sup>1</sup>, Hiroyuki Hamada<sup>1</sup>  
 (¹ Grad. Sch. Agric., Kyushu Univ., ² Grad. Sch. Bioresour. Bioenviron. Sci., Kyushu Univ.)
- 17:06** 2Hp08 Study of liposome assembly toward artificial cellular biofilms  
 .....○Rio Sugimoto<sup>1</sup>, Yuki Yokoe<sup>1</sup>, Shogo Yoshimoto<sup>2</sup>, Katsutoshi Hori<sup>2</sup>, Masahito Ishikawa<sup>1</sup>  
 (¹ Grad. Sch. Biosci., Nagahama Inst. Bio-Sci. Technol., ² Grad. Sch. Eng., Nagoya Univ.)

## Room I West Bldg. 2, W2-401 (15:30–17:30)

### 【Biomass, Bioresource and Energy Engineering】

- 15:30 2Ip01 Study on the microbial community structure and metabolic characteristics of volatile fatty acid anaerobic digestion based on multi-omics  
 ..... Yan Zeng, Yating Chen, Min Gou, ○Yueqin Tang  
 (Coll. Architect. Environ., Sichuan Univer., P. R. China)
- 15:42 2Ip02 Effect of byproduct glycerol from enzymatic biodiesel fuel production on growth and oil production of *Chlorella protothecoides*  
 .....○Shimpei Aikawa<sup>1</sup>, Shinji Hama<sup>2</sup>, Chiaki Ogino<sup>3</sup>  
 (<sup>1</sup>JIRCAS, <sup>2</sup>Bio-energy corporation, <sup>3</sup>Fac. Eng., Kobe Univ.)
- 15:54 2Ip03 Screening of electrosynthetic bacteria utilizing novel electron mediator  
 .....○Kento Uno, Masaki Ihara (Grad. Sch. Sci. Technol., Shinshu Univ.)
- 16:06 2Ip04 Study on microbiological mechanism of methanogenic cellulose degradation by metaomics analysis  
 ..... ○Maoting Li, Min Gou, Yueqin Tang (Coll. Architect. Environ., Sichuan Univer., P. R. China)
- 16:18 2Ip05 A novel dry anaerobic digestion by using agricultural waste  
 ..... ○Zhuoqi Xu, Tian Yuan, Jing Xu, Yi Liu (Grad. Sch. Life Environ. Sci., Univ. Tsukuba)
- 16:30 Break
- 16:42 2Ip06 Thraustochytrid culture using Shochu Distillery Residues  
 .....○Kiwamu Dohgomor<sup>1</sup>, Aki Moritani<sup>1</sup>, Makoto Kodama<sup>2</sup>, Masahiro Hayashi<sup>3</sup>  
 (<sup>1</sup>Miyazaki Pref. Ind. Technol. Center,  
<sup>2</sup>Miyazaki Pref. Ind. Technol. Center (Current: Miyazaki Pref. Environ. Mgmt. Division),  
<sup>3</sup>Fac. Agric., Univ. Miyazaki)
- 16:54 2Ip07 Development of photobioreactor with external circulation loop aimed at effective 1,3-PDO production using genetically engineered cyanobacteria  
 .....○Mizuka Yamaguchi<sup>1</sup>, Yoichi Kumada<sup>1</sup>, Jun-ichi Horiuchi<sup>1</sup>, Yasutaka Hirokawa<sup>2</sup>,  
 Taizo Hanai<sup>2</sup>, Akio Murakami<sup>3</sup>  
 (<sup>1</sup>Grad. Sch. Sci. Technol., Kyoto Inst. Technol., <sup>2</sup>Grad. Sch. Agric., Kyushu Univ.,  
<sup>3</sup>Grad. Sch. Eng, Kobe Univ.)
- 17:06 2Ip08 Investigation of biodiesel production method through co-culture using aerial microalgae and nitrogen-fixing bacteria  
 .....○Misaki Kojima (Fac. Eng., Kogakuin Univ.)
- 17:18 2Ip09 Characterization of acidophilic microalga and search for uses  
 .....○Sorata Okazawa<sup>1</sup>, Masaaki Konishi<sup>2</sup>  
 (<sup>1</sup>Grad. Sch. Eng., Kitami Inst. Technol., <sup>2</sup>Kitami Inst. Technol.)

## Room J West Bldg. 2, W2-402 (15:30–17:30)

### 【Bioremediation; Environmental Technology, Wastewater Treatment】

- 15:30 2Jp01 Bicarbonate-based carbon capture and utilization using microalgae  
 ..... ○Jo-Shu Chang (Dept. Chem. Mater. Eng., Tunghai Univ.)
- 15:42 2Jp02 Ultrasonication assisted aqueous deep eutectic solvents for enhanced lipid extraction from microalgal *Chlorella*: A green approach for biofuel production  
 ..... ○Antira Wichaphian<sup>1,2</sup>, Sirasit Srinuanpan<sup>2,3</sup> (<sup>1</sup>Dept. Biol., Fac. Sci., Chiang Mai Univ.,  
<sup>2</sup>Biorefiner. Bioprocess Eng. Res. Cluster, Chiang Mai Univ., <sup>3</sup>ORA, Chiang Mai Univ.)



- 15:54 2Jp03 Biochar addition reduces nitrogen loss and accelerates composting process by affecting the core microbial community during distilled grain waste composting  
.....○Sun Zhao-Yong, Xie Cai-Yun, Gou Min, Tang Yue-Qin  
(Sichuan Univ.)
- 16:06 2Jp04 Effects of Storable Biomineral on the Activity of Anaerobic Microbial Communities  
.....○Koki Saigusa (Grad. Sch. Integr. Sci. Technol., Shizuoka Univ.)
- 16:18 2Jp05 Screening for silica-solubilizing bacteria and analysis of the underlying mechanism  
.....○Yuma Tominaga<sup>1</sup>, Takenori Ishida<sup>1</sup>, Hisakage Funabashi<sup>1</sup>, Ryuichi Hirota<sup>1</sup>,  
Akio Kuroda<sup>1</sup>, Takeshi Ikeda<sup>1,2</sup>  
(<sup>1</sup> Grad. Sch. Integr. Sci. Life, Hiroshima Univ., <sup>2</sup>PRESTO, JST)
- 16:30 Break
- 16:42 2Jp06 Development of a sustainable hydroponic system for efficient use of by-products generated from anaerobic digestion  
.....○Jing Xu, Tian Yuan, Zhuoqi Xu (Grad. Sch. Life Environ. Sci., Univ. Tsukuba)
- 16:54 2Jp07 Changes in the rice field microflora by operation of an organic cultivation support robot (Aigamorobo)  
.....○Hajime Nakatani<sup>1</sup>, Katsutoshi Hori<sup>1</sup>, Taiichiro Ookawa<sup>2</sup>, Tetsuya Nakamura<sup>3</sup>, Masahiro Takagi<sup>4</sup>  
(<sup>1</sup> Grad. Sch. Eng., Nagoya Univ., <sup>2</sup> Grad. Sch. Agric., Tokyo Univ. Agric. Technol., <sup>3</sup> NEWGREEN,  
<sup>4</sup> Sch. Mater. Sci., JAIST)
- 17:06 2Jp08 Heterotrophic cultivation of *Chlorella* sp. on hydroponic effluent for the production of high-value PUFA-rich biomass  
.....○Nanthakrit Sriket<sup>1,2</sup>, Sirasit Srinuanpan<sup>2,3</sup> (<sup>1</sup> Dept. Biol., Fac. Sci., Chiang Mai Univ.,  
<sup>2</sup> Biorefiner. Bioprocess Eng. Res. Cluster, Chiang Mai Univ., <sup>3</sup> ORA, Chiang Mai Univ.)
- 17:18 2Jp09 Effects of environmental factors on the nutrient uptake of algal family Gracilariaceae  
.....○Hirota Kakita<sup>1</sup>, Yoshiaki Takahashi<sup>2</sup> (<sup>1</sup> Grad. Sch. of Integrated Basic Sciences, Nihon Univ.,  
<sup>2</sup> Wakayama Prefectural Experimental Station)

## Room K Main Bldg., M-B07 (15:30–17:30)

### 【Brewing, Brewing Technology; Food Science, Food Technology】

- 15:30 2Kp01 Isolation of a gene involved in acid stress tolerance in the yeast *Hanseniaspora uvarum*  
.....Ayumu Shigemoto, ○Daisuke Moriguchi, Akinori Matsushika  
(Grad. Sch. Systems Eng., Kindai Univ.)
- 15:42 2Kp02 <Topics>  
Comprehensive lipidome analysis of *Saccharomyces cerevisiae* under cold stress  
.....○Nobuyuki Okahashi<sup>1,2</sup>, Daiki Hara<sup>1</sup>, Junko Iida<sup>3</sup>, Fumio Matsuda<sup>1,2</sup>  
(<sup>1</sup> Grad. Sch. IST, Osaka Univ., <sup>2</sup> OTRI, Osaka Univ., <sup>3</sup> Shimadzu Corp.)
- 15:54 2Kp03 Evaluation of antioxidant capacity of sake by brewing with high temperature saccharification using Hitachi sake lactic acid bacteria™ during long term storage  
.....○Tomotsugu Noguchi, Taku Ishikawa, Keisuke Tobita (Ind. Technol. Innov. Cent. Ibaraki)
- 16:06 2Kp04 The correlation between the sensory attributes and metabolomic profiles of fine and bulk cocoa  
.....○Enik Nurlaili Afifah<sup>1</sup>, Indah Anita Sari<sup>4</sup>, Agung Wahyu Susilo<sup>4</sup>, Abdul Malik<sup>4</sup>,  
Eiichiro Fukusaki<sup>1,2,3</sup>, Sastia Prama Putri<sup>1,2</sup>  
(<sup>1</sup> Dept. Biotech., Grad. Sch. Eng., Osaka Univ.,  
<sup>2</sup> Industrial Biotechnology Initiative Division, Institute for Open and Transdisciplinary Research Initiatives,  
<sup>3</sup> Osaka University Shimadzu Omics Innovation Research Laboratories,  
<sup>4</sup> Indonesian Coffee and Cocoa Research Institute, Indonesia)

- 16:18** 2Kp05 Metabolome of soybean subjected to microbial intervention-soaking  
 .....○Rifqi Ahmad Riyanto<sup>1</sup>, Eiichiro Fukusaki<sup>1,2,3</sup>, Sastia Prama Putri<sup>1,2</sup>  
 (1 Dept. Biotechnol., Grad. Sch. Eng., Osaka Univ., 2 OTRI, Osaka Univ.,  
 3 Shimadzu Omics Innov. Res. Lab., Osaka Univ.)
- 16:30** Break
- 16:42** 2Kp06 Characterization of commercially sake made of Kyoto Yeast  
 .....○Tamami Kiyono, Hidenori Tanaka, Jun Wada (KMIITC)
- 16:54** 2Kp07 Development of seed koji suitable for sake brewing in Shizuoka Prefecture  
 .....○Masahiro Suzuki<sup>1</sup>, Masatoshi Hakamata<sup>1</sup>, Chikayo Iizuka<sup>1</sup>, Ken Yokozawa<sup>5</sup>, Hiroshi Takagi<sup>7</sup>,  
 Satoshi Katsuyama<sup>6</sup>, Yoshikuni Sugimoto<sup>1</sup>, Kazuhiro Iwashita<sup>2</sup>, Youhei Shiraishi<sup>3</sup>,  
 Masataka Mochizuki<sup>4</sup>, Kenjiro Totsuka<sup>4</sup>  
 (1 Shizuoka Pref. Ind. Res. Inst. Numazu Center, 2 NRIB, 3 Bioc Corp., 4 Shizuoka sake makers Association,  
 5 Shizuoka Inst. Environ. Hygiene, 6 Shizuoka Pref. Office, 7 Asahi Kasei Pharma Corp.)
- 17:06** 2Kp08 Flavor profiles of brown sugar rum using dunder (distillation residue) and microorganisms isolated from dunder  
 ..... Aoi Tenra<sup>1</sup>, Akira Nakazato<sup>2</sup>, Ynathan Asikin<sup>1</sup>, Shusaku Yoshida<sup>1</sup>,  
 Keiko Uechi<sup>1</sup>, ○Toki Taira<sup>1</sup>  
 (1 Fac. Agric., Univ. Ryukyus, 2 Mizuhoshuzou)
- 17:18** 2Kp09 <Topics>  
 Wide-target quantitative lipidome analysis of dried sardines using supercritical fluid chromatography/mass spectrometry  
 .....○Yasuhito Matsubara<sup>1</sup>, Hiromi Matsuoka<sup>1</sup>, Mamoru Fujikawa<sup>1</sup>, Shigehiko Ohnishi<sup>1</sup>,  
 Masatomo Takahashi<sup>2</sup>, Takeshi Bamba<sup>2</sup>  
 (1 Kagawa Ind. Technol. Center, 2 Med. Inst. Bioreg., Kyushu Univ.)

## Room L Main Bldg., M-103 (15:30–16:30/16:42–17:30)

### 【Biosensing and Analytical Chemistry; Sensors and Monitoring Devices】

- 15:30** 2Lp01 Rapid and accurate glucagon assay system using receptor-derived peptides  
 .....○Hajime Shigeto, Shohei Yamamura (Health & Medical Res. Inst., AIST)
- 15:42** 2Lp02 Electrochemical sensing of urokinase-type plasminogen activator with epitope-imprinted polymers-coated electrodes  
 .....○Wei-Cheng Hsu<sup>1</sup>, Kai-Hsi Liu<sup>1,2</sup>, Mei-Hwa Lee<sup>3</sup>, Chuen-Yau Chen<sup>1</sup>, Hung-Yin Lin<sup>1</sup>  
 (1 Natl Univ. Kaohsiung, 2 Zuoying Branch Kaohsiung Armed Forces General Hosp., 3 I-Shou Univ.)
- 15:54** 2Lp03 Synthesis of MXene doped epitope-imprinted polymers for the sensing of human epididymis protein 4  
 .....○Cheng-En Weng<sup>1</sup>, Kuan Liang Chen<sup>1,2</sup>, Mei-Hwa Lee<sup>3</sup>, Jui-Yang Feng<sup>1</sup>, Hung-Yin Lin<sup>1</sup>  
 (1 Natl Univ. Kaohsiung, 2 Zuoying Armed Forces General Hosp., 3 I-Shou Univ.)
- 16:06** 2Lp04 Development of a highly sensitive detection method for asbestos using AlphaLISA  
 .....○Satsuki Kuwano, Kyoka Ichikawa, Takenori Ishida, Takeshi Ikeda,  
 Hisakage Funabashi, Ryuichi Hirota, Akio Kuroda  
 (Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)
- 16:18** 2Lp05 Optical sensing of human transforming growth factor beta 1 with MXene-doped magnetic epitope-imprinted poly(ethylene-co-vinyl alcohol) composite nanoparticles  
 .....○Hsiao-Chuan Yang<sup>1</sup>, Cheng-Chih Lin<sup>1,2</sup>, Mei-Hwa Lee<sup>3</sup>, Hung-Yin Lin<sup>1</sup>  
 (1 Natl Univ. Kaohsiung, 2 Zuoying Armed Forces General Hosp., 3 I-Shou Univ.)

### 【Brewing, Brewing Technology; Food Science, Food Technology】

- 16:42 2Lp06 Efficient conditions for extracting components from wood chips during the maturation process  
 ..... Wakana Motoda, Kakeru Takano, ○Kazuki Nomura  
 (Genome Biotechnol. Lab., Kanazawa Inst. Technol.)
- 16:54 2Lp07 Antioxidant and potential anticancer activity of protein isolates from *Spirulina* and *Chlorella* biomass by microwave-assisted (MAE) deep eutectic solvents-based protein extraction  
 ..... ○May Thu Zin, Sirasit Srinuanpan (Chiang Mai Univ.)
- 17:06 2Lp08 Inhibitory efficacy of *Arthrospira platensis* extract on skin pathogenic bacteria and antioxidant activity  
 ..... ○Ranchana Rungjiraphirat, Yingmanee Tragoolpua (Dept. Biol. Fac. Sci., Chiang Mai Univ.)
- 17:18 2Lp09 Health functions of various seaweed grass  
 ..... ○Masahiro KURAKAKE, Sayaka SAITO, Natsuki HIRAGAI, Rinka SAITO  
 (Fac. Life Sci. Biotechnol., Fukuyama Univ.)

### Room M Main Bldg., M-123 (15:30–17:30)

#### 【Cell Culture Engineering】

- 15:30 2Mp01 Design of iPS cell suspension culture using particle tracking  
 ..... ○Ikki Horiguchi, Kou Tanioka, Masaru Kojima, Shinji Sakai (Grad. Sch. Eng. Sci., Osaka Univ.)
- 15:42 2Mp02 Improved hyphal dispersion strain of *Aspergillus oryzae* for recombinant protein production in the liquid fermentation  
 ..... ○Shunya Susukida<sup>1</sup>, Kiyooki Muto<sup>1</sup>, Ken Miyazawa<sup>1</sup>, Akira Yoshimi<sup>2,3,4</sup>, Keietsu Abe<sup>1,4</sup>  
 (<sup>1</sup>Grad. Sch. Agric. Sci., Tohoku Univ., <sup>2</sup>Grad. Sch. Agric., Kyoto Univ.,  
<sup>3</sup>Grad. Sch. Glob. Environ. Stud., Kyoto Univ., <sup>4</sup>NICHE, Tohoku Univ.)
- 15:54 2Mp03 Microbial production of lipids from various carbon sources by oleaginous yeast *Lipomyces starkeyi*  
 ..... ○Akihiro Ishioka, Prihardi Kahar, Yutaro Mori, Chiaki Ogino (Grad. Sch. Eng, Kobe Univ.)
- 16:06 2Mp04 Enhancement of the glycolate (GL) molar fraction of GL polymers biosynthesized from ethylene glycol by investigation of culture conditions  
 ..... ○Munenori Hayashida<sup>1</sup>, Yosuke Ota<sup>1</sup>, Masayoshi Honda<sup>2</sup>, Hideki Abe<sup>3</sup>, Miwa Yamada<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. Agric. Sci., Iwate Univ., <sup>2</sup>Fac. Eng., Tokyo Univ. Sci., <sup>3</sup>RIKEN CSRS)
- 16:18 2Mp05 Analysis of the effect of food colorants on the physiological activities of intestinal bacteria  
 ..... ○Reika Momoi<sup>1</sup>, Hideki Aoyagi<sup>1,2</sup>  
 (<sup>1</sup>Grad. Sch. Deg. P. Agro-Bioresour. Sci. Technol., Univ. Tsukuba, <sup>2</sup>Inst. Life Environ. Sci., Univ. Tsukuba)
- 16:30 Break
- 16:42 2Mp06 A forced aeration system of submerge for shaking culture suppresses volatilization  
 ..... ○Masato Takahashi, Hideki Aoyagi (Inst. Life Environ. Sci., Univ. Tsukuba)
- 16:54 2Mp07 Development of an innovative high-throughput screening method targeting previously uncultivated microorganisms with useful functions using highly functionalized microdroplets  
 ..... ○Yuya Mutou<sup>1</sup>, Yumi Shimomura<sup>1</sup>, Setsu Kato<sup>1</sup>, Yutaka Nakashimada<sup>1,2</sup>, Yoshiteru Aoi<sup>1,2</sup>  
 (<sup>1</sup>Grad. Sch. Integr. Sci. Life, Hiroshima Univ., <sup>2</sup>Seto Inland Sea CN Research Center)
- 17:06 2Mp08 <Topics>  
 Development and application of a simple gut mimic epithelium-microbial co-culture system  
 ..... ○Yoshihiro Umehara<sup>1</sup>, Hideki Aoyagi<sup>1,2</sup> (<sup>1</sup>Grad. Sch. Deg. P. Life Agric. Sci., Univ. Tsukuba,  
<sup>2</sup>Inst. Life Environ. Sci., Univ. Tsukuba)
- 17:18 2Mp09 Advances in medium optimization technology using deep learning  
 ..... ○Kazuki Watanabe<sup>2</sup>, Masaaki Konishi<sup>1</sup> (<sup>1</sup>Kitami Inst. Technol., <sup>2</sup>Kitami Inst. Tech., Grad. Sch. Eng.)

## Room N Main Bldg., M-124 (15:30–17:30)

### 【Biochemical Engineering】

- 15:30 2Np01 Evaluation of the concentration of labile iron pool in LossKat, an *Escherichia coli* strain that emerged from laboratory evolution  
 .....○Rio Itsui<sup>1</sup>, Norifumi Kawakami<sup>1</sup>, Yuki Horiuchi<sup>1</sup>, Hiromu Yamaguchi<sup>1</sup>, Risa Matsuki<sup>1</sup>, Yu-ki Tanaka<sup>2</sup>, Yasumitsu Ogra<sup>2</sup>, Kenji Miyamoto<sup>1</sup>  
 (<sup>1</sup> Fac. Sci. and Technol., Keio Univ., <sup>2</sup> Grad. Sch. Pharm., Chiba Univ.)
- 15:42 2Np02 Metal homeostasis in an evolved *E. coli* strain in the presence of abiotic metal ions  
 .....○Kyoji Ohyama, Norihumi Kawakami, Yuki Horiuchi, Hiromu Yamaguchi, Daisuke Jike, Risa Matsuki, Daichi Kasugahara, Kenji Miyamoto  
 (Fac. Sci. and Technol., Keio Univ.)
- 15:54 2Np03 Metal recovery mechanism of acid tolerant *Priestia* sp. under strong acidic conditions  
 .....○Chikara Takano<sup>1</sup>, Hideki Aoyagi<sup>2</sup>, Kazunori Nakashima<sup>1</sup>, Satoru Kawasaki<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Eng., Hokkaido Univ., <sup>2</sup> Inst. Life Environ., Tsukuba Univ.)
- 16:06 2Np04 Separation and concentration of bioactive peptides by heat-treated silica gel  
 .....Yusuke Ishi, Momoha Iriyama, Shota Shimizu, Yuta Matsunaga, Hitomi Hagawa, Hirokazu Akiyama, Kazunori Shimizu, ○Hiroyuki Honda  
 (Grad. Sch. Eng., Nagoya Univ.)
- 16:18 2Np05 Inhibition of enzyme leakage caused by heat treatment of psychrophile-based simple biocatalysts  
 .....○Chie Son, Kota Anada, Takahisa Tajima, Akiko Hida, Junichi Kato  
 (Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)
- 16:30 Break
- 16:42 2Np06 Exploration of Strong Promoters in *Corynebacterium glutamicum*  
 .....○Hikaru Nagai, Kyoshiro Nonaka, Fumikazu Takahashi, Shingo Koyama (Kao Corp.)
- 16:54 2Np07 <Topics>  
 Exploration of Aromatic Compounds Efflux Factors in *Corynebacterium glutamicum*  
 .....○Jitsuro Kaneda, Hikaru Nagai, Kyoushirou Nonaka, Fumikazu Takahashi, Shingo Koyama  
 (Kao Corp.)
- 17:06 2Np08 Elucidation of suppression mechanism on glutamate mediated oxidative stress in PC12 cells by using extracts of basidiomycete *Trametes versicolor*  
 .....○Masaki Miura, Maki Moriwaki (Grad. Sch. Sci. Eng., Univ. Toyama)
- 17:18 2Np09 Differentiation induction of Mouse iPS cells into antibody production cells  
 .....○Ryosuke Hamano<sup>1</sup>, Guirong Kanai<sup>1</sup>, Noriko Yamano-Adachi<sup>1,2</sup>, Takeshi Omasa<sup>1,2</sup>  
 (<sup>1</sup> Grad. Sch. Eng., Osaka Univ., <sup>2</sup> OTRI, Osaka Univ.)

## Room O Main Bldg., M-178 (15:30–16:06)

### 【Nucleic Acid Engineering; Peptide Engineering】

- 15:30 2Op01 Elucidation of drug resistance mechanism of beta-hairpin antibacterial peptides by ion current analysis  
 .....○Yuki Hagiri, Mahiro Suzuki, Ryuji Kawano (Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)
- 15:42 2Op02 Artificial intelligence-based design of amino acid sequences of antifungal peptides  
 .....○Hiroyuki Hamada<sup>1</sup>, Yiqi Yang<sup>2</sup>, Tamon Matsuzawa<sup>2</sup>, Ryotaro Yukutomo<sup>2</sup>, Takeshi Zendo<sup>1</sup>, Yuki Soma<sup>1</sup>, Taizo Hanai<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Agric., Kyushu Univ., <sup>2</sup> Grad. Sch. Bioresour. Bioenviron. Sci., Kyushu Univ.)

15:54 2Op03

Analysis and application of synthetic extracellular vesicles encapsulating nucleic acids

.....○Masako Takatsu<sup>1</sup>, Kunihiko Morihiko<sup>2</sup>, Keitaro Yoshimoto<sup>1</sup>, Akimitsu Okamoto<sup>2</sup>  
(<sup>1</sup> Grad. Sch. Arts Sci., Univ. Tokyo, <sup>2</sup> Grad. Sch. Eng., Univ. Tokyo)

### **Luncheon Seminars (11:30–12:30)**

**Room B West Bldg. 9, W9-324**

**2L-B Sartorius Japan K.K.**

**Room C West Lecture Bldg. 1, WL1-201**

**2L-C TOSOH CORPORATION**

**Room E West Lecture Bldg. 1, WL1-401**

**2L-E bitBiome, Inc.**

**Room K Main Bldg., M-B07**

**2L-K Bacchus Bio Innovation Co., Ltd.**

**Room O Main Bldg., M-178**

**2L-O SHIMADZU CORPORATION**

# September 10, 2024

Titles in bold indicate presentations by the winners of this year's SBJ Excellent Student Award (Hishou Award).

Time	No.	Title	Author (Affiliation)
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○=Indicates the presenter

## Symposium

### Room A West Bldg. 9, Multi-Purpose Digital Hall (9:00–11:00)

#### Pioneering the Future of Plastic Recycling: Enzymes and Microbes for a Circular Economy

9:00		Opening Remarks	Masahito Hosokawa Chair: <b>Masahito Hosokawa</b>
9:02	3S-Aa01	Polyethylene terephthalate (PET) metabolism by <i>Ideonella sakaiensis</i>	○Shosuke Yoshida, MinFey Chek (Grad. Sch. Biol. Sci., NAIST)
9:25	3S-Aa02	Biological depolymerization of plastics: PET and beyond	○Hal Alper (UT Austin)
9:48	3S-Aa03	PET biodegradation: the enzyme, the process, and the microbes	○Sierin Lim (NTU)
10:11	3S-Aa04	PET recycling: from enzyme and process optimization to an industrial plant	○Alain Marty (Carbios)
10:34	3S-Aa05	Industrial Enzyme Discovery and Engineering from Microbial Single-cell Genome Database	○Soichiro Tsuda <sup>1</sup> , Hideaki Mabashi <sup>1</sup> , Makoto Hirai <sup>1</sup> , Shigeru Sakurai <sup>1</sup> , Masato Kogawa <sup>1</sup> , Akiho Morimoto <sup>1</sup> , Masahito Hosokawa <sup>1,2</sup> ( <sup>1</sup> bitBiome Inc., <sup>2</sup> Grad. Sch. Adv. Sci. Eng., Waseda Univ.)
10:57		Closing Remarks	Shosuke Yoshida

### Room B West Bldg. 9, W9-324 (9:00–11:00)

#### Revision of Basic Education Incentive Items—A Guide to Biotechnology Human Resource Development—

			Chair: <b>Masaharu Ishii</b>
9:00		Opening Remarks	Masaya Kawase Chair: <b>Masaya Kawase</b>
9:05	3S-Ba01	Survey on Recommended Basic Items for Biotechnology Education in 2014	○Toru Nakayama (Grad. Sch. Eng., Tohoku Univ.) Chair: <b>Masaharu Ishii</b>
9:20	3S-Ba02	Gap between current high school education and university education	○Masaya Kawase (Dept. Biosci., Nagahama Inst. Bio-Sci. Technol.)

9:35		Break	
			Chair: <b>Masaya Kawase</b>
9:45	3S-Ba03	What is required for basic education incentive items? - from the perspective of companies and professional engineers - .....○Hideki Tohda <sup>1,2</sup> ( <sup>1</sup> The Institution of Professional Engineers, Japan, <sup>2</sup> Chitose Laboratory Corp.)	
10:00	3S-Ba04	Revision of Recommended Basic Items for Biotechnology Education .....○Kazuhiro Mori (Grad. Sch., Interdiscip. Res., Univ. Yamanashi)	
10:15		Break	
			Chairs: <b>Masaya Kawase, Masaharu Ishii</b>
10:20		General Discussion	
			Chair: <b>Masaya Kawase</b>
10:55		Closing Remarks .....Masaharu Ishii	

## Room C West Lecture Bldg. 1, WL1-201 (9:00–11:00)

### Frontier of Research on Microbial Dark Matter

9:00		Opening Remarks .....Hideki Aoyagi	Chair: <b>Yu Imai</b>
9:02	3S-Ca01	Culture techniques revealed iron corrosion by a novel nitrate-reducing bacteria .....○Takao Iino, Moriya Ohkuma (RIKEN BRC-JCM)	
9:24	3S-Ca02	The application of microdroplet technology in microbial cultivation and bioactive compound exploration .....○Shunsuke Ichikawa <sup>1</sup> , Nobuyuki Homma <sup>2</sup> , Masayuki Ishige <sup>2</sup> ( <sup>1</sup> Mie Univ., <sup>2</sup> On-chip Biotechnologies Co., Ltd.)	Chair: <b>Takaaki Horinouchi</b>
9:46	3S-Ca03	Exploration of novel enzymes from metagenomic data .....○Takuro Nunoura (JAMSTEC)	
10:08	3S-Ca04	Valuable discovery and invention by AI .....○Kotaro Kamiya (SyntheticGestalt KK)	Chairs: <b>Takaaki Horinouchi, Yu Imai</b>
10:30		Panel Discussion	

## Room D West Lecture Bldg. 1, WL1-301 (Lecture Theater) (9:00–11:00)

### Toward the Creation of Biotechnology That Transcends Nature by Redesigning Life

9:00		Opening Remarks .....Wataru Aoki	Chair: <b>Wataru Aoki</b>
9:03	3S-Da01	Chemical transmission of genetic information for artificial life .....○Hikari Okita (Grad. Sch. Eng., Nagoya Univ.)	
9:22	3S-Da02	Reprogramming <i>E. coli</i> with noncanonical nucleotides .....○Koji Hashimoto <sup>1</sup> , Moritoshi Sato <sup>1,2</sup> , Floyd Romesberg <sup>3</sup> ( <sup>1</sup> Grad. Sch. Arts Sci., Univ. Tokyo, <sup>2</sup> KISTEC, <sup>3</sup> Sanofi)	

9:41	3S-Da03	Devising pseudo-natural peptides by artificial in vitro biosynthesis systems ..... ○Yuki Goto (Grad. Sch. Sci., Kyoto Univ.) Chair: <b>Koji Hashimoto</b>
10:00	3S-Da04	Challenging to redesign life based on artificial ribosomes ..... ○Wataru Aoki (Grad. Sch. Eng., Osaka Univ.)
10:19	3S-Da05	Artificial cell engineering based on liquid-liquid phase separation ..... ○Ryo Mizuuchi (Sch. Adv. Sci. Eng., Waseda Univ.)
10:38	3S-Da06	Life in artificial systems woven with physical autocatalytic reactions ..... ○Matsuo Muneyuki <sup>1,2</sup> ( <sup>1</sup> Grad. Sch. Integr. Sci. Life, Hiroshima Univ., <sup>2</sup> Grad. Sch. Arts Sci., Univ. Tokyo)
10:57		Closing Remarks ..... Koji Hashimoto

## Room E West Lecture Bldg. 1, WL1-401 (9:00–11:00)

### Innovation in Biotechnology Automation Through Collaboration with Japan Analytical Instruments Manufacturers Association (JAIMA) Member Companies

9:00		Introduction ..... Fumio Matsuda Chair: <b>Takeshi Bmba</b>
9:05	3S-Ea01	Current and perspective of laboratory automation in biotechnology Ver. 2024 ..... ○Horinouchi Takaaki (AIRC, AIST)
9:30	3S-Ea02	Laboratory Automation at analytical instrument company ..... ○Yusuke Tagawa (Shimadzu Corp.) Chair: <b>Susumu Uchiyama</b>
9:55	3S-Ea03	Cell culture DX research for automation ..... ○Kei Kanie <sup>1,2</sup> ( <sup>1</sup> Fac. Eng., Kindai Univ., <sup>2</sup> Grad. Sch. Pharm. Sci., Nagoya Univ.)
10:20	3S-Ea04	Efforts and achievements regarding automation equipment using a 6-axis articulated robot for preprocessing work in analytical testing ..... ○Yasuyuki Oishi (Yamato Scientific co., Ltd.) Chair: <b>Fumio Matsuda</b>
10:45		General Discussion

## Room I West Bldg. 2, W2-401 (9:00–11:00)

### New Challenges from Academia and Industry to Combat Drug-Resistant (AMR) Bacteria

9:00		Opening Remarks ..... Daisuke Fukuda Chair: <b>Hikaru Suenaga</b>
9:03	3S-Ia01	AMR strategies targeting biofilms associated with chronic and persistent infections ..... ○Shinya Sugimoto (The Jikei University School of Medicine)
9:22	3S-Ia02	The development of gepotidacin, the first in a new class of oral antibiotics for the potential treatment of uncomplicated urinary tract infections and uncomplicated gonorrhoea ..... ○Yoko Kayama (GlaxoSmithKline)



9:41	3S-Ia03	Development of histidine kinase inhibitors targeting TCSs to control AMR .....○Ryutarō Utsumi <sup>1</sup> , Toshihide Okajima <sup>1</sup> , Teruhiko Ishikawa <sup>2</sup> , Yoko Eguchi <sup>3</sup> , Masayuki Igarashi <sup>4</sup> , Jiro Nakayama <sup>5</sup> ( <sup>1</sup> SANKEN, Osaka Univ., <sup>2</sup> Okayama Univ., <sup>3</sup> BOST Kindai Univ., <sup>4</sup> BIKAKEN, <sup>5</sup> Grad. Sch. Agric., Kyushu Univ.) Chair: <b>Daisuke Fukuda</b>
10:00	3S-Ia04	A big potential of uncultured bacteria to solve the antimicrobial resistance (AMR) problem .....○Masachika Takata (Murata Manufacturing Co., Ltd.)
10:19	3S-Ia05	Discovery of drug resistance overcome agents from natural product library .....○Kazuo Shin-ya (Biomed. Res. Inst., AIST)
10:38	3S-Ia06	Discovery of cefiderocol, a new siderophore cephalosporin with antimicrobial activity against AMR .....○Yoshinori Yamano (Shionogi & Co., Ltd.)
10:57		Closing Remarks .....Hikaru Suenaga

## Room K Main Bldg., M-B07 (9:00–11:00)

### The Mechanism of Olfaction and Odor Sensing Technologies

9:00		Opening Remarks .....Yosuke Fukutani Chair: <b>Mina Okochi</b>
9:02	3S-Ka01	Human olfactory receptor and odor perception .....○Sayoko Ihara (Grad. Sch. Agric. Life Sci., Univ. Tokyo)
9:20	3S-Ka02	Development of odor sensing technologies using mammalian odorant receptors .....○Yosuke Fukutani <sup>1</sup> , Masashi Abe <sup>1</sup> , Haruka Saito <sup>1</sup> , Mei Saito <sup>1</sup> , Hroaki Matsunami <sup>2</sup> , Masafumi Yohda <sup>1</sup> ( <sup>1</sup> Grad. Sch. Eng., Tokyo Univ. Agric. Technol., <sup>2</sup> Dept. MGM., Sch. Med., Duke Univ.)
9:38	3S-Ka03	Application of insect olfactory functions to odor sensing technology .....○Hidefumi Mitsuno <sup>1</sup> , Yuji Sukekawa <sup>1</sup> , Takeshi Sakurai <sup>2</sup> , Ryohei Kanzaki <sup>1</sup> ( <sup>1</sup> RCAST, Univ. Tokyo, <sup>2</sup> Agric., Tokyo Univ. Agric.) Chair: <b>Yosuke Fukutani</b>
9:56	3S-Ka04	Design of Peptide Probes for Volatile Organic Compound Sensing .....○Mina Okochi (Sch. Mater. Chem. Technol., Tokyo Tech)
10:14	3S-Ka05	Biofluorometric sensing and imaging of volatile chemicals using metabolic enzymes .....○Kohji Mitsubayashi (Inst. Biomater. Bioeng., Tokyo Med. Dent. Univ.)
10:32	3S-Ka06	Robust artificial olfactory sensor electronics .....○Takeshi Yanagida (Grad. Sch. Eng., Univ. Tokyo)
10:50		Closing Remarks .....Mina Okochi

## Room N Main Bldg., M-124 (9:00–11:00)

### Prospects and Challenges of Academic-Industry Collaboration and Human Resources for the Next Generation of the Bioindustry

Chair: **Satoshi Yoshida**

- 9:00** 3S-Na01 Challenges in human resources development in BioDX at Novonosis  
 .....○Tomoko Matsui (Novozymes Japan Ltd.)
- 9:30** 3S-Na02 The challenges of human resource in start-up companies  
 .....○Mitsuo Umetsu <sup>1,2</sup> (<sup>1</sup> Grad. Sch. Eng., Tohoku Univ., <sup>2</sup> RevokKa Ltd.)
- Chair: **Masahiro Konishi**
- 10:00** 3S-Na03 Importance of empirical knowledge and its transmission  
 .....○Yoshio Katakura (Fac. Chem. Mater. Bioeng., Kansai Univ.)
- 10:30** 3S-Na04 Towards the development of next-generation human resources to support the cell manufacturing industry  
 .....○Ryuji Kato (Grad. Sch. Pharm. Sci., Nagoya Univ.)

## Oral Presentations

### Room A West Bldg. 9, Multi-Purpose Digital Hall (13:30–16:54)

#### 【Cell and Tissue Engineering】

- 13:30** 3Ap01 Construction of human iPSC-derived skeletal muscle tissues with large contractile force  
 .....○Seitaro Nakamura, Yuhei Kamei, Ayumu Matsushima, Kazuki Yamamoto,  
 Hirokazu Akiyama, Hiroyuki Honda, Kazunori Shimizu  
 (Grad. Sch. Eng., Nagoya Univ.)
- 13:42** 3Ap02 Development of a muscle tissue model containing skeletal muscle-derived mesenchymal stromal cells  
 .....○Itsuki Fujii <sup>1</sup>, Tomoya Takase <sup>1</sup>, Hirokazu Akiyama <sup>1</sup>, So-ichiro Fukada <sup>2</sup>,  
 Akiyoshi Uezumi <sup>3</sup>, Hiroyuki Honda <sup>1</sup>, Kazunori Shimizu <sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Eng., Nagoya Univ., <sup>2</sup> Grad. Sch. Pharm. Sci., Osaka Univ., <sup>3</sup> Med. Inst. Bioreg., Kyushu Univ.)
- 13:54** 3Ap03 **Investigation of critical parameters in the immunosuppressive potency assay of mesenchymal stem cells**  
 .....○Kengo Momose <sup>1</sup>, Taishi Kodama <sup>1</sup>, Kakeru Koide <sup>1</sup>, Takumi Hisada <sup>1</sup>, Kenjiro Tanaka <sup>1</sup>,  
 Mika Kusuhara <sup>2</sup>, Shinji Kusakawa <sup>2</sup>, Rumi Sawada <sup>2</sup>, Ryuji Kato <sup>1,3</sup>  
 (<sup>1</sup> Grad. Sch. Pharm. Sci., Nagoya Univ., <sup>2</sup> Natl. Inst. Health. Sci., <sup>3</sup> Inst. of Nano-Life-Syst., Nagoya Univ.)
- 14:06** 3Ap04 Evaluate the stability of microcarrier culture system for mesenchymal stem cell expansion  
 .....○Riku Yamamoto <sup>1</sup>, Yunhao Liao <sup>1</sup>, Masahiro Kino-oka <sup>1,2</sup> (<sup>1</sup> Dept. Biotechnol., Grad. Sch. Eng., Osaka  
 Univ., <sup>2</sup> Research Base for Cell Manufacturability, Grad. Sch. Eng. Osaka Univ.)
- 14:18** 3Ap05 Application of a PEG-based integrin stimulating molecule to freshly isolated primary hepatocytes as a method to preserve cell viability  
 .....○Mario K. Uehara, Lucija Stefan, Yasuhiro Ikegami, Yusuke Sakai, Hiroyuki Ijima  
 (Dept. Chem. Eng., Grad. Sch. Eng., Kyushu Univ.)
- 14:30** Break
- 14:42** 3Ap06 <Topics>  
 Oxytocin promotes elongation of hair shaft-like sprouting in hair follicle organoids  
 .....○Tatsuto Kageyama <sup>1,2</sup>, Junji Fukuda <sup>1,2</sup> (<sup>1</sup> KISTEC, <sup>2</sup> Grad. Sch. Eng., Yokohama Natl. Univ.)

- 14:54 3Ap07 Partial reprogramming of human adult dermal papilla cells for hair regenerative medicine  
 .....○Ayaka Nanmo<sup>1</sup>, Tatsuto Kageyama<sup>1,2,3</sup>, Atsushi Suzuki<sup>1,2</sup>, Junji Fukuda<sup>1,2,3</sup>  
 (1 Grad. Sch. Eng., Yokohama Natl. Univ., 2 Inst. Adv. Sci., Yokohama Natl. Univ., 3 KISTEC)
- 15:06 3Ap08 Cell self-aggregation technique-based preparation of fiber-shaped capillary-like tissue in perfusion flow channel  
 .....○Shingo Hashimoto<sup>1</sup>, Akihiko Sugiyama<sup>2</sup>, Takeshi Moriwaki<sup>3</sup>, Hiroshi Matsumoto<sup>1</sup>, Ryosuke Iwai<sup>4</sup>  
 (1 Grad. Sch. Med. Dent. Pharm. Sci., Okayama Univ., 2 Dept. Veterinary Med., Okayama Univ. Sci.,  
 3 Grad. Sch. Sci. Technol., Hirosaki Univ., 4 Inst. Front. Sci. Technol., Okayama Univ. Sci.)
- 15:18 3Ap09 Preparation of intestinal absorption model using multicellular spheroids of human colon cancer-derived cell line  
 .....○Lupeng Teng<sup>1,2</sup>, Ryosuke Iwai<sup>2</sup> (1 Grad. Sci. Tech., Okayama Univ. Sci.,  
 2 Inst. Front. Sci. Tech., Okayama Univ. Sci.)
- 15:30 3Ap10 Monitoring the migration of mouse neural stem/progenitor cells on the culture dish and hydrogel substrates: involvement of matrix metalloproteinase  
 ..... Hideki Mori, Yunan Li, ○Masayuki Hara (Grad. Sch. Sci., Osaka Metro. Univ.)
- 15:42 Break
- 15:54 3Ap11 Differentiation of dental pulp stem cells via a CRISPR/dCas9 activation system  
 .....○Wen-Ruei Wei<sup>1</sup>, Chia-Ching Chang<sup>2</sup>, Mei-Hwa Lee<sup>3</sup>, Hung-Yin Lin<sup>1</sup>  
 (1 Natl Univ. Kaohsiung, 2 Zuoying Armed Forces General Hosp., 3 I-Shou Univ.)
- 16:06 3Ap12 Development of iPS cell culture protocol using microcarriers with synthetic matrix  
 .....○Fumiko Ono<sup>1</sup>, Yuta Nakamura<sup>2</sup>, Teruhiko Yanagisawa<sup>2</sup>, Kenta Takakura<sup>2</sup>, Fumiaki Shima<sup>2</sup>,  
 So Yamura<sup>2</sup>, Ichiro Sakai<sup>1</sup>, Yuko Kitano<sup>1</sup>, Masayoshi Tsukahara<sup>1</sup>  
 (1 CiRA Foundation, 2 Sekisui Chemical Co., Ltd.)
- 16:18 3Ap13 Three-dimensional culture system for mammalian cells using hierarchical hydrogels supported on core materials  
 ..... ○Rio Iwamoto, Rie Utoh, Masumi Yamada (Grad. Sch. Sci. Eng., Chiba Univ.)
- 16:30 3Ap14 Protective effect of cells cultured in glucose-deprived condition by glycolytic inhibition and its possible application to 3D-cell culture  
 ..... ○Rui Zhang (Fac. Eng., Okayama Univ. Sci.)
- 16:42 3Ap15 Myogenic differentiation of mesenchymal stem cell by MyoD1 transduction  
 .....○Keita Kanki<sup>1</sup>, Ei Cho<sup>2</sup>, Yicheng Wang<sup>2</sup>, Keyu Chen<sup>2</sup>, Yongji Li<sup>2</sup>  
 (1 Fac. Biosci., Okayama Univ. Sci., 2 Grad. Sch. Eng., Okayama Univ. Sci.)

## Room C West Lecture Bldg. 1, WL1-201 (13:30–17:06)

### 【Taxonomy, Phylogenetics; Genetic Engineering】

- 13:30 3Cp01 Development of a regulated promoter in a hyperthermophilic archaeon, *Thermococcus kodakarensis*  
 .....Naomi Yoshida<sup>1</sup>, Souma Wakao<sup>1</sup>, Riko Kanai<sup>1</sup>, ○Tamotsu Kanai<sup>1,2</sup>  
 (1 Fac. Eng., Toyama Pref. Univ., 2 Biotechnol. Res. Center, Toyama Pref. Univ.)
- 13:42 3Cp02 Functional analysis of a novel magnetite teeth specific protein conserved in chitons  
 ..... ○Koki Okada<sup>1</sup>, Akira Satoh<sup>2</sup>, Hisao Moriya<sup>2</sup>, Tadayoshi Kanao<sup>2</sup>, Takashi Tamura<sup>2</sup>,  
 Kenji Okoshi<sup>3</sup>, David Kisailus<sup>4</sup>, Kiori Obuse<sup>2</sup>, Michiko Nemoto<sup>2</sup>  
 (1 Grad. Sch. Environ. Life Sci., Okayama Univ., 2 Grad. Sch. Environ. Life Natural Sci., Okayama Univ.,  
 3 Fac. Sci., Toho Univ., 4 Univ. California-Irvine)

- 13:54 3Cp03 Membrane vesicle production in *Pseudomonas aeruginosa* is enhanced by a mechanism involving the biofilm dispersion factor  
 ..... ○ Mizuki Kanno<sup>1</sup>, Hiroyuki Futamata<sup>1,2,3</sup>, Yosuke Tashiro<sup>1,3</sup>  
 (1 Grad. Sch. Sci. Technol. Shizuoka Univ., 2 Res. Inst. Green Sci. Technol., Shizuoka Univ.,  
 3 Grad. Sch. Integr. Sci. Technol., Shizuoka Univ.)
- 14:06 3Cp04 Promoted membrane vesicle production of *Escherichia coli rodZ* mutant strain by osmotic pressure  
 ..... ○ Yoshihiro Ojima<sup>1</sup>, Kaho Toda<sup>1</sup>, Yuhei Tahara<sup>2</sup>, Makoto Miyata<sup>2</sup>, Masayuki Azuma<sup>1</sup>  
 (1 Grad. Sch. Eng., Osaka Metro. Univ., 2 Grad. Sch. Sci., Osaka Metro. Univ.)
- 14:18 3Cp05 Characterization of the hyper-vesiculating strain of probiotic *Escherichia coli*  
 ..... ○ Toru Sawada<sup>1</sup>, Kaho Toda<sup>1</sup>, Yoshihiro Ojima<sup>1</sup>, Yuhei Tahara<sup>2</sup>,  
 Makoto Miyata<sup>2</sup>, Masayuki Azuma<sup>1</sup>  
 (1 Grad. Sch. Eng., Osaka Metro. Univ., 2 Grad. Sch. Sci., Osaka Metro. Univ.)
- 14:30 Break
- 14:42 3Cp06 Identification of unknown regulatory factors involved in xylanolytic gene expression using the screening method based on growth defects due to unscheduled *brlA* expression in *Aspergilli*  
 ..... ○ Katsuya Gomi, Tomoko Shintani, Jikian Tokashiki (Grad. Sch. Agric. Sci., Tohoku Univ.)
- 14:54 3Cp07 Research and development of a droplet generation chip for single-cell research that does not require a liquid delivery device  
 ..... ○ Mamoru Hirafuji (YODAKA Co.,Ltd.)
- 15:06 3Cp08 Host recognition mechanism of jumbo phage vB\_BceM\_WH1 infecting *Bacillus cereus* group  
 ..... ○ Muhammad Azka Aufa Ramadhani<sup>1</sup>, Minami Matsunaka<sup>1</sup>, Yasuhiro Fujino<sup>1</sup>,  
 Takeo Iwamoto<sup>2</sup>, Yasuaki Hiromasa<sup>1</sup>, Katsumi Doi<sup>1</sup>  
 (1 Grad. Sch. Bioresour. Bioenviron. Sci., Kyushu Univ., 2 Jikei Univ. Sch., Med.)
- 15:18 3Cp09 Silkworm-expressed canine parvovirus-like particles displaying tetravalent envelope domain III of dengue virus induce neutralizing antibodies in mice  
 ..... ○ Krishna Raja Muthuraman<sup>1</sup>, Jirayu Boonyakida<sup>2</sup>, Mami Matsuda<sup>3</sup>,  
 Ryosuke Suzuki<sup>3</sup>, Enoch Y. Park<sup>1,4</sup>  
 (1 Grad. Sch. Sci. Technol. Shizuoka Univ., 2 Res. Inst. Green Sci. Technol., Shizuoka Univ.,  
 3 Natl. Inst. Infect. Dis., 4 Fac. Agric., Shizuoka Univ.)
- 15:30 3Cp10 <Topics>  
 Cell-free synthesis of multiple plasmids using an oligo pool  
 ..... ○ Satoru Sumi, Hayato Ishitobi, Takuya Koyama, Masayuki Su'etsugu  
 (Dept. of Life. Sci., Coll. of Sci., Univ. of Rikkyo)
- 15:42 Break
- 15:54 3Cp11 Bacteriophage engineering for targeted multidrug-resistant *Salmonella*  
 ..... ○ Riska Ayu Febrianti, Erlia Narulita (Dept. Biotechnol., Jember Univ.)
- 16:06 3Cp12 Genome editing of the bioplastic-producing bacterium, *Cobetia* sp. IU180733JP01 (5-11-6-3) which is capable of utilizing seaweeds  
 ..... ○ Shuta Tanabe<sup>1</sup>, Takuma Ishida<sup>1</sup>, Yuki Umebayashi<sup>2</sup>, Sung-Jin Kawai<sup>2</sup>,  
 Hiroaki Suzuki<sup>2</sup>, Miwa Yamada<sup>1</sup>  
 (1 Grad. Sch. Agric. Sci., Iwate Univ., 2 New Field Pioneering Div. Toyota Boshoku Corp.)
- 16:18 3Cp13 Double knockout of two target genes via genome co-editing using a nitrate transporter gene *nrtA* and a putative thiamine transporter gene *thiI* as selectable markers in *Aspergillus oryzae*  
 ..... ○ Koichi Tamano<sup>1,2</sup>, Haruka Takayama<sup>1</sup> (1 BPRI, AIST, 2 CBBB-OIL, AIST)
- 16:30 3Cp14 Molecular docking of sgRNA construction on the CRISPR/Cas9 system from *Salmonella* bacteriophage to overcome foodborne disease  
 ..... ○ Aisa Aulia Nur Aini<sup>1</sup>, Erlia Narulita<sup>1,2</sup> (1 Post.Grad.Sch.Biotech, UNEJ, 2 Dept.Bio.Edu, UNEJ)

- 16:42 3Cp15 Screening of thermotolerant genes in the yeast *Kluyveromyces marxianus* by gene disruption using CRISPR/Cas9 and a marker gene without any sequence for homologous recombination  
 .....○Satoshi Ebe<sup>1</sup>, Yuki Terauchi<sup>2</sup>, Rinji Akada<sup>3</sup>, Hisashi Hoshida<sup>3</sup>  
 (<sup>1</sup> Grad. Sch. Sci. Tech. Innov., Yamaguchi Univ., <sup>2</sup> YU-RC TMR, <sup>3</sup> Fac. Eng., Yamaguchi Univ.)
- 16:54 3Cp16 <Topics>  
 Development of fit-for-purpose genome editing technology by upgrading the LoAD system based on CRISPR-Cas9  
 .....○Sota Nishikawa<sup>1,2</sup>, Mizuki Sato<sup>3</sup>, Tetsushi Sakuma<sup>2</sup>  
 (<sup>1</sup> Grad. Sch. Med., Kyoto Univ., <sup>2</sup> Grad. Sch. Agric., Kyoto Univ.,  
<sup>3</sup> Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)

## Room D West Lecture Bldg. 1, WL1-301 (Lecture Theater) (13:30–16:42)

### 【Metabolic Engineering】

- 13:30 3Dp01 Development of High Glucose-Producing Cyanobacteria Strains  
 .....○Tatsuya Babasaki<sup>1</sup>, Kenya Tanaka<sup>2</sup>, Yuichi Kato<sup>3</sup>, Akihiko Kondo<sup>1,2,4</sup>, Tomohisa Hasunuma<sup>1,2,4</sup>  
 (<sup>1</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ., <sup>2</sup> EGBRC, Kobe Univ., <sup>3</sup> Fac. Eng., Toyama Pref. Univ.,  
<sup>4</sup> CSRS, RIKENS)
- 13:42 3Dp02 GABA production by metabolic modification of the nitrogen-fixing cyanobacterium *Anabaena* sp. PCC 7120  
 .....○Yuki Hatanaka<sup>1</sup>, Ayaka Tsuji<sup>2</sup>, Yuichi Kato<sup>4</sup>, Akihiko Kondo<sup>1,2,3</sup>, Tomohisa Hasunuma<sup>1,2,3</sup>  
 (<sup>1</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ., <sup>2</sup> EGBRC, Kobe Univ., <sup>3</sup> CSRS, RIKENS,  
<sup>4</sup> Fac. Eng., Toyama Pref. Univ.)
- 13:54 3Dp03 Effect of pyruvate flux engineering on protein production in *Aspergillus oryzae*  
 .....○Kotone Matsumoto<sup>1</sup>, Tomohiro Suzuki<sup>1</sup>, Satoshi Wakai<sup>2,3</sup>, Kahar Prihardi<sup>1</sup>,  
 Yutaro Mori<sup>1</sup>, Chiaki Ogino<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Eng, Kobe Univ., <sup>2</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ., <sup>3</sup> JAMSTEC)
- 14:06 3Dp04 Metabolic engineering of *Saccharomyces cerevisiae* for (R)-citramalate production  
 .....○Ryosuke Mitsui<sup>1</sup>, Tomokazu Shirai<sup>1</sup>, Akihiko Kondo<sup>1,2,3</sup>  
 (<sup>1</sup> CSRS, RIKENS, <sup>2</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ., <sup>3</sup> EGBRC, Kobe Univ.,)
- 14:18 3Dp05 <Topics>  
 Design of ensemble simulator for yeast kinetic metabolism using multi-omics data  
 .....○Genki Sato, Kazuki Yamasaki, Nobuyuki Okahashi, Fumio Matsuda (Grad. Sch. IST, Osaka Univ.)
- 14:30 Break
- 14:42 3Dp06 Production of Useful Substances from Waste Glycerol by Metabolic Engineering of Microorganisms  
 .....○Aseel Alawi, Takahiro Yamaguchi, Toshiaki Nakajima  
 (Grad. Sch. Life Environ. Sci., Univ. Tsukuba)
- 14:54 3Dp07 Lipid production from glycerol by the oleaginous yeast *Lipomyces starkeyi*  
 .....○Aika Hirano, Rikako Sato, Harutake Yamazaki, Hiroaki Takaku  
 (Fac. Appl. Life Sci., Niigata Univ. Pharm. Appl. Life Sci.)
- 15:06 3Dp08 Effect of *Shinorhizobium meliloti* hemoglobin expression on growth and lipid production in the oleaginous yeast *Lipomyces starkeyi*  
 .....○Yuuta Higuchi, Rikako Sato, Harutake Yamazaki, Hiroaki Takaku  
 (Fac. Appl. Life Sci., Niigata Univ. Pharm. Appl. Life Sci.)

- 15:18 3Dp09 Molecular breeding to enhance alpha-linolenic acid production in the oleaginous yeast *Lipomyces starkeyi*  
 .....○Satsuki Chino, Rikako Sato, Harutake Yamazaki, Hiroaki Takaku  
 (Fac. Appl. Life Sci., Niigata Univ. Pharm. Appl. Life Sci.)
- 15:30 3Dp10 **Metabolic engineering of the Acetyl-CoA producing pathway in *Lipomyces starkeyi***  
 .....○Takafumi Iwakura<sup>1</sup>, Taisuke Seike<sup>1</sup>, Nobuyuki Okahashi<sup>1</sup>, Rikako Sato<sup>2</sup>,  
 Hiroaki Takaku<sup>2</sup>, Fumio Matsuda<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. IST, Osaka Univ., <sup>2</sup> Fac. Appl. Life Sci., Niigata Univ. Pharm. Appl. Life Sci.)
- 15:42 Break
- 15:54 3Dp11 Biosynthesis and bioactivity of ganoderic acids  
 .....○Jian-Jiang Zhong, Han Xiao, Ting Shi, Yuhuan Luo, Bo Lei  
 (Shanghai Jiao Tong Univ.)
- 16:06 3Dp12 Functional analysis of feedback inhibition-insensitive aspartate kinase identified in a threonine-accumulating mutant of *Saccharomyces cerevisiae*  
 .....○Shota Isogai<sup>1</sup>, Akira Nishimura<sup>1</sup>, Akiko Inoue<sup>1</sup>, Shino Sonohara<sup>2</sup>,  
 Takashi Tsugukuni<sup>2</sup>, Tomoyuki Okada<sup>2</sup>, Hiroshi Takagi<sup>1</sup>  
 (<sup>1</sup> Institute for Research Initiatives, NAIST, <sup>2</sup> Plant Bio Business Unit, Musashi Seimitsu Industry Co., Ltd.)
- 16:18 3Dp13 Beneficial effect of optimizing the expression balance of the mevalonate pathway enzymes introduced into the mitochondria on terpenoid production in *Saccharomyces cerevisiae*  
 .....○So Yanagibashi<sup>1</sup>, Takahiro Bamba<sup>2</sup>, Takayoshi Kirisako<sup>1</sup>,  
 Akihiko Kondo<sup>2,3</sup>, Tomohisa Hasunuma<sup>2,3</sup>  
 (<sup>1</sup> Kirin Holdings Co., Ltd., <sup>2</sup> EGBRC, Kobe Univ., <sup>3</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ.)
- 16:30 3Dp14 Production of Ethylene glycol via the xylose oxidative pathway in *Saccharomyces cerevisiae*  
 .....○Miho Wakiya<sup>1</sup>, Kenya Tanaka<sup>2</sup>, Takahiro Bamba<sup>2</sup>, Akihiko Kondo<sup>1,2,3</sup>, Tomohisa Hasunuma<sup>1,2,3</sup>  
 (<sup>1</sup> Grad. Sch. Sci. Technol. Innov., Kobe Univ., <sup>2</sup> EGBRC, Kobe Univ., <sup>3</sup> CSRS, RIKENS)

## Room E West Lecture Bldg. 1, WL1-401 (13:30–17:06)

### 【Fermentation Physiology, Fermentation Technology; Omics Technology; Invited Lecture】

- 13:30 3Ep01 Analysis of an inducible enzyme system catalyzing urolithin 4-dehydroxylation in *Gordonibacter urolithinifaciens* DSM 27213<sup>T</sup>  
 .....○Anno Katasho<sup>1</sup>, Hiroko Watanabe<sup>1</sup>, Takanori Nakajima<sup>2</sup>, Hiroaki Yamamoto<sup>2</sup>,  
 Jun Ogawa<sup>1</sup>, Shigenobu Kishino<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Agric., Kyoto Univ., <sup>2</sup> Business Development Center, Daicel Corp.)
- 13:42 3Ep02 Fermentative production of a cellulose-aminating polysaccharide by feeding hydrogen sulfide as growth factor or energy source  
 .....○Tomoaki Saito<sup>1</sup>, Yui Araki<sup>1</sup>, Naoki Matsunaga<sup>1</sup>, Keiko Kondo<sup>2</sup>,  
 Masato Katahira<sup>2</sup>, Minoru Takeda<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Eng., Yokohama Natl. Univ., <sup>2</sup> Inst. Adv. Energy Kyoto Univ.)
- 13:54 3Ep03 Expression relationship of genes involved in glucose transport in *Corynebacterium glutamicum*  
 .....○Kohei Takaoka<sup>1</sup>, Hayato Murakami<sup>1</sup>, Yota Tsuge<sup>1,2</sup>  
 (<sup>1</sup> Grad. Sch. Nat. Sci. Technol., Kanazawa Univ., <sup>2</sup> InFiniti, Kanazawa Univ.)
- 14:06 3Ep04 Examination of productivity of Glutamine-producing bacteria in emulsified medium  
 .....○Fumio Baba (Dynanofer Emulsification and Fermentation Lab.)
- 14:18 3Ep05 Development of Methane Fermentation from Organic Wastes with Ammonia Recovery Process  
 .....○Shunsuke Komatsu, Yutaka Nakashimada, Akira Waki  
 (Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)

- 14:30** Break
- 14:42** 3Ep06 <Invited Lecture>  
 Environmental exposomics : a sneak peak into the microbial exposures in the environment-human-food nexus of some lakes and caves in the Philippines  
 .....○Ronilo Jose Danila Flores, Joshua Jomao-as, Juan Miguel Balatibat, Romella Beringuela, John Vincent Pleto, Lawrence Vitug, Pamela Custodio, Bonie Datul, Ria Arizala, Russel Santos, Marian De Leon (Univ. Philippines, Los Banos)
- 15:06** 3Ep08 <Invited Lecture>  
 Host range and stability of *Eschericia coli*- and *Klebsiella pneumoniae*- infecting bacteriophages from hospital wastewater  
 .....○Ursela Bigol, Marel Jan Joloro, Sharmen Berlin, Ruth Antoinette Chin, Janna Ysabelle Casidsid, Michael Angelou Nada, Mark Christian Reterta, Anton Roi Collado, Arra Asejo, Nikka Mae Yadao, Aubrey Joy Tejada, Virgilio De Paz, Joseph Ancla (Virology and Vaccine Research Program, DOST-ITDI, Philippines)
- 15:54** 3Ep11 Transcriptomic response of *Xanthomonas campestris* during xanthan gum production to glutamate concentration  
 .....○Min Gou, CaiYun Xie, ZhaoYong Sun, YueQin Tang (Sichuan Univ.)
- 16:06** 3Ep12 Optimizing inhibitor tolerance of *Saccharomyces cerevisiae* strains for enhanced xylitol production from straw  
 .....○Cai Yun Xie, Min Gou, Zhao Yong Sun, Yue Qin Tang (Sichuan Univ.)
- 16:18** 3Ep13 Metabolomic comparison of *Saccharomyces cerevisiae* strains used in the food industry  
 .....○Ayumu Fuke<sup>1</sup>, Taisuke Seike<sup>1,2</sup>, Fumio Matsuda<sup>1,2,3</sup>  
 (<sup>1</sup> Grad. Sch. IST, Osaka Univ., <sup>2</sup> OTRI, Osaka Univ., <sup>3</sup> Omics. Innov. Res. Lab, Osaka Univ. Shimadzu Corp)
- 16:30** 3Ep14 Investigation of changes in sake volatile components at different temperatures  
 .....○Kyoka Maehara<sup>1</sup>, Masahiro Furuno<sup>1,2,3</sup>, Eiichiro Fukusaki<sup>1,2,3</sup>  
 (<sup>1</sup> Grad. Sch. Eng., Osaka Univ., <sup>2</sup> Industrial Biotechnology Initiative Division, Institute for Open and Transdisciplinary Research Initiatives, Osaka Univ., <sup>3</sup> Osaka University Shimadzu Omics Innovation Research Laboratories)
- 16:42** 3Ep15 Identifying quality marker in Indonesian Fine Robusta coffee using metabolomics approach  
 .....○Sou Mizutani<sup>1</sup>, Eiichiro Fukusaki<sup>1,2,3</sup>, Sastia Prama Putri<sup>1,2</sup>  
 (<sup>1</sup> Grad. Sch. Eng., Osaka Univ., <sup>2</sup> OTRI, Osaka Univ., <sup>3</sup> Osaka University Shimadzu Omics Innovation Research Laboratories)
- 16:54** 3Ep16 <Topics>  
 Development of low-input RNA-seq for monitoring of gene expression in bacterial populations  
 .....○Mika Nishimura<sup>1,2</sup>, Tetsutarou Hayashi<sup>5</sup>, Mariko Kuse<sup>5</sup>, Itoshi Nikaido<sup>5,6</sup>, Haruko Takeyama<sup>1,2,3,4</sup>, Masahito Hosokawa<sup>1,2,3,4</sup>  
 (<sup>1</sup> Grad. Sch. Adv. Sci. Eng., Waseda Univ., <sup>2</sup> CBBB-OIL, AIST-Waseda Univ., <sup>3</sup> Res. Org. Nano Life Innov., Waseda Univ., <sup>4</sup> Inst. Adv. Res. Biosyst. Dynam., Waseda Res. Inst. Sci. Eng., Waseda Univ., <sup>5</sup> BDR, RIKEN, <sup>6</sup> Med. Res. Inst., Tokyo Med. and Dent. Univ.)

## Room F West Bldg. 3, W3-301 (13:30–17:06)

### 【Enzymology, Enzyme】

- 13:30** 3Fp01 <Topics>  
Engineering an enzyme for one-step production of vanillin from ferulic acid  
.....○Toshiki Furuya<sup>1</sup>, Shizuka Fujimaki<sup>1</sup>, Kuniki Kino<sup>2</sup>, Shuichi Hirose<sup>3</sup>,  
Naoki Shirasaka<sup>3</sup>, Shimpei Ushio<sup>3</sup>  
(<sup>1</sup> Fac. Sci. Tec., Tokyo Univ. Sci., <sup>2</sup> Sch. Adv. Sci. Eng., Waseda Univ., <sup>3</sup> NAGASE & CO., LTD.)
- 13:42** 3Fp02 Construction of a rapid screening system for laccase by combining hydrogel beads and cell-free protein synthesis  
.....○Kensei Orita<sup>1</sup>, Yui Okawa<sup>1</sup>, Kousuke Minamihata<sup>1</sup>, Noriho Kamiya<sup>1,2</sup>  
(<sup>1</sup> Grad. Sch. Eng., Kyushu Univ., <sup>2</sup> CFC, Kyushu Univ.)
- 13:54** 3Fp03 Development of aggregation-inducing tags using the chromoprotein  
.....○Seiya Suzuki, Kentaro Miyazaki, Hiroya Tomita, Kohsuke Honda (Grad. Sch. Eng., Osaka Univ.)
- 14:06** 3Fp04 Substrate profiling of human transglutaminases and its application to the identification of transglutaminase protein substrates  
.....○Jasmina Damjanovic<sup>1</sup>, T. I. Kalhari Munaweera<sup>1</sup>, Maurizio Camagna<sup>1</sup>, Naoto Nemoto<sup>3</sup>,  
Kiyotaka Hitomi<sup>2</sup>, Hideo Nakano<sup>1</sup>  
(<sup>1</sup> Grad. Sch. Bioagric., Sci., Nagoya Univ., <sup>2</sup> Grad. Sch. Pharm. Sci., Nagoya Univ.,  
<sup>3</sup> Epsilon Molecular Engineering, Inc.)
- 14:18** 3Fp05 Single molecule display based engineering of D-amino acid oxidase for D-alanine detection  
.....○Kalhari Munaweera, Kakeru Ikeda, Jasmina Damjanovic, Hideo Nakano  
(Grad. Sch. Bioagric., Sci., Nagoya Univ.)
- 14:30** Break
- 14:42** 3Fp06 Screening for new carbonyl reductases by digital methods  
.....Kunwadee Palasin<sup>1</sup>, Suguru Shinoda<sup>1</sup>, Shinsuke Miki<sup>2</sup>, Shogo Nakano<sup>3</sup>, ○Yasuhisa Asano<sup>1</sup>  
(<sup>1</sup> Biotechnol. Res. Center, Toyama Pref. Univ., <sup>2</sup> Central Glass Co., Ltd.,  
<sup>3</sup> Sch. Food Nutr. Sci., Univ. Shizuoka.)
- 14:54** 3Fp07 Tetrapeptide synthesis by binding dipeptides using adenylation domain from NRPS  
.....Risa Kiriki<sup>1</sup>, ○Risako Nagata<sup>1</sup>, Shin Suzuki<sup>2</sup>, Kuniki Kino<sup>1,2</sup>  
(<sup>1</sup> Grad. Sch. Adv. Sci. Eng., Waseda Univ., <sup>2</sup> Res. Inst. Sci. Eng., Waseda Univ.)
- 15:06** 3Fp08 <Topics>  
Development of the efficient synthesis method for diketomorpholines using adenylation domain from NRPS  
.....○Kurumi Hoshi<sup>1</sup>, Shota Karakama<sup>1</sup>, Shin Suzuki<sup>2</sup>, Kuniki Kino<sup>1,2</sup>  
(<sup>1</sup> Grad. Sch. Adv. Sci. Eng., Waseda Univ., <sup>2</sup> Res. Inst. Sci. Eng., Waseda Univ.)
- 15:18** 3Fp09 Anserine production using carnosine-*N*-methyltransferase  
.....○Shin Suzuki<sup>1</sup>, Hiroaki Yanagawa<sup>2</sup>, Yu Sanuka<sup>2</sup>, Ryuichi Nishina<sup>2</sup>, Kuniki Kino<sup>1,2</sup>  
(<sup>1</sup> Res. Inst. Sci. Eng., Waseda Univ., <sup>2</sup> Grad. Sch. Adv. Sci. Eng., Waseda Univ.)
- 15:30** 3Fp10 Screening of membrane-bound dehydrogenase of acetic acid bacteria reacting with 1,3-butanediol  
.....Momoka Kimura<sup>1</sup>, ○Naoya Kataoka<sup>2,3</sup>, Kazunobu Matsushita<sup>3,4</sup>, Toshiharu Yakushi<sup>2,3</sup>  
(<sup>1</sup> Grad. Sch. Sci. Technol. Innov., Yamaguchi Univ., <sup>2</sup> Org. Res. Initiatives, Yamaguchi Univ.,  
<sup>3</sup> RCTMR, Yamaguchi Univ., <sup>4</sup> Fac. Agric., Yamaguchi Univ.)
- 15:42** Break
- 15:54** 3Fp11 Orphan selenophosphate synthetase of a methanogenic archaeon can function in synthesis of selenium-containing molecules  
.....○Riku Aono<sup>1</sup>, Ryota Mizutani<sup>1</sup>, Masao Inoue<sup>1,2</sup>, Anna Ochi<sup>1</sup>, Hisaaki Mihara<sup>1</sup>  
(<sup>1</sup> Coll. Life Sci., Ritsumeikan Univ., <sup>2</sup> R-GIRO, Ritsumeikan Univ.)



- 16:06** 3Fp12 Characterization of lipolytic enzymes and genes from *A. chevalieri* and *A. pseudoglaucus*  
 .....○Shinji Takenaka<sup>1</sup>, Yuuka Konashi<sup>1</sup>, Yukihiro Kimura<sup>1</sup>, Shinichi Tanaka<sup>2</sup>, Mikiharu Doi<sup>2</sup>  
 (1 Kobe Univ. Grad. Sch. of Agric., <sup>2</sup>Marutomo Co., Ltd.)
- 16:18** 3Fp13 Characterization of alpha-glucanotransferase from *Aspergillus luchuensis*  
 .....○Keiko Uechi, Hina Shimabukuro, Osamu Mizutani, Toki Taira (Fac. Agric., Univ. Ryukyus)
- 16:30** 3Fp14 Characterization of novel methoxyhydroquinone dioxygenase from white-rot basidiomycete *Phanerochaete chrysosporium*  
 .....○Hiroyuki Kato, Hiromitsu Suzuki, Motoyuki Shimizu, Masashi Kato  
 (Grad. Sch. Agric., Meijo Univ.)
- 16:42** 3Fp15 Production of PETase by *Aspergillus oryzae* (1): Maximize production through culture studies~  
 .....○Kentaro Ide<sup>1</sup>, Takehiko Todokoro<sup>1</sup>, Risa Nakamura<sup>2</sup>, Emi Kawano<sup>2</sup>,  
 Rikako Sanuki<sup>2</sup>, Shosuke Yoshida<sup>2</sup>, Hiroki Ishida<sup>1</sup>  
 (1 Res. Inst., Gekkeikan Sake Co., Ltd., <sup>2</sup>Grad. Sch. Biol. Sci., NAIST)
- 16:54** 3Fp16 Production of PETase by *Aspergillus oryzae* (2): Functional characterization of glycosylated PETase~  
 .....○Risa Nakamura<sup>1</sup>, Emi Kawano<sup>1</sup>, Rikako Sanuki<sup>1</sup>, Takehiko Todokoro<sup>2</sup>,  
 Kentaro Ide<sup>2</sup>, Hiroki Ishida<sup>2</sup>, Shosuke Yoshida<sup>1</sup>  
 (1 Grad. Sch. Biol. Sci., NAIST, <sup>2</sup>Res. Inst., Gekkeikan Sake Co., Ltd.)

## Room G West Bldg. 3, W3-201 (13:30–17:06)

### 【Proteins】

- 13:30** 3Gp01 Modulation of enzyme activity by amino-acid sequence redesign  
 .....○Yoshihide Makino, Tamotsu Kanai (Fac. Eng., Toyama Pref. Univ.)
- 13:42** 3Gp02 Creation of highly active and thermostable mutants of Ambrein synthase using evolutionary engineering  
 .....○Takuto Murakoshi<sup>1</sup>, Daiziro Ueda<sup>1</sup>, Ryo Sato<sup>1</sup>, Asuka Fuzii<sup>1</sup>,  
 Yusuke Otani<sup>2</sup>, Daisuke Umeno<sup>3</sup>, Tutomu Sato<sup>1</sup>  
 (1 Grad. Sch. Sci. Technol., Niigata Univ., <sup>2</sup>Grad. Sch. Eng., Chiba Univ.,  
<sup>3</sup>Sch. Adv. Sci. Eng., Waseda Univ.)
- 13:54** 3Gp03 Expression of chimera protein that has *de novo* designed beta-barrel pore and its use for nanopore sensing  
 .....○Ayaka Nakada<sup>1</sup>, Kota Naito<sup>2</sup>, Rina Ogawa<sup>1</sup>, Misa Yamaji<sup>1</sup>,  
 Yoshikazu Tanaka<sup>2</sup>, Ryuji Kawano<sup>1</sup>  
 (1 Grad. Sch. Eng., Tokyo Univ. Agric. Technol., <sup>2</sup>Grad. Sch. Life Sci., Tohoku Univ.)
- 14:06** 3Gp04 Formation and inhibition of heterogeneous protein aggregation in an artificial protein cage  
 .....○Eri Kiyota<sup>1</sup>, Norifumi Kawakami<sup>1</sup>, Keiichi Hayashi<sup>1</sup>, Mao Kitamura<sup>1</sup>,  
 Ryoichi Arai<sup>2</sup>, Kenji Miyamoto<sup>1</sup>  
 (1 Sci. Eng., Keio Univ., <sup>2</sup>Fac. Textile Sci. Technol., Shinshu Univ.)
- 14:18** 3Gp05 Hydrophobization of an artificial protein nanocage TIP60 for dispersing fluorescent molecules in aqueous media  
 .....○Maika Yamashita<sup>1</sup>, Norifumi Kawakami<sup>1</sup>, Ryoichi Arai<sup>2</sup>, Kenji Miyamoto<sup>1</sup>  
 (1 Sci. Eng., Keio Univ., <sup>2</sup>Fac. Textile Sci. Technol., Shinshu Univ.)
- 14:30** Break
- 14:42** 3Gp06 Design of a protein molecule for connecting microbes  
 .....○Taiyo Hijikata<sup>1</sup>, Norifumi Kawakami<sup>1</sup>, Ryoichi Arai<sup>2</sup>, Kenji Miyamoto<sup>1</sup>  
 (1 Sci. Eng., Keio Univ., <sup>2</sup>Fac. Textile Sci. Technol., Shinshu Univ.)

- 14:54** 3Gp07 <Topics>  
Novel approach for screening bacterial colonies that produce thermostable protein variants  
.....Shunsuke Yoshimura<sup>1</sup>, Matsuhiro Morishita<sup>1</sup>, Takashi Ohshiro<sup>2,3</sup>, Hirokazu Suzuki<sup>2,3</sup>  
(<sup>1</sup>Dept. Eng., Grad. Sch. Sust. Sci., Tottori Univ., <sup>2</sup>Fac. Eng., Tottori Univ., <sup>3</sup>GSC, Tottori Univ.)
- 15:06** 3Gp08 Molecular dynamics simulations of the mechanical properties of the domains of the fiber protein AtaA  
.....Jun Sasahara, Keita Hemmi, Shogo Yoshimoto, Katsutoshi Hori (Grad. Sch. Eng., Nagoya Univ.)
- 15:18** 3Gp09 Design and Functional Evaluation of Chimeric Molecules Based on circular permuted CutA1  
.....Toya Sasaki, Koreyosi Imamura, Hiroyuki Imanaka  
(Grad. Sch. of Env., Life, Nat. Sci. & Tech., Okayama Univ.)
- 15:30** 3Gp10 Stimuli-responsive mussel adhesive proteins  
.....Ami Sasabe, Kazunori Nakashima, Anju Pilakka Veedu, Chikara Takano, Satoru Kawasaki  
(Grad. Sch. Eng., Hokkaido Univ.)
- 15:42** Break
- 15:54** 3Gp11 Effects of mutations in the S-S bond and hydrophobic and hydrophilic regions of yeast cell wall-derived emulsifying glycoprotein Gas1 on emulsifying activity  
.....Koshi Noguchi, Yoshihiro Ojima, Masayuki Azuma (Grad. Sch. Eng., Osaka Metro. Univ.)
- 16:06** 3Gp12 <Topics>  
Improvements of the smallest luciferase "picALuc"; "picALuc2.0" & "picARE"  
.....Yuki Ohmuro-Matsuyama<sup>1</sup>, Tadaomi Furuta<sup>2</sup>  
(<sup>1</sup>Shimadzu Corp., <sup>2</sup>Sch. Life Sci. Technol, Tokyo Tech)
- 16:18** 3Gp13 Anti-inflammatory effects of microbial transglutaminase-responsive link module  
.....Honoka Sugaya<sup>1</sup>, Masashi Okawa<sup>1</sup>, Natsuko Inagaki<sup>1</sup>, Makoto Nakakido<sup>1</sup>,  
Satoru Nagatoishi<sup>1,2</sup>, Kouhei Tsumoto<sup>1,2</sup>, Taichi Ito<sup>1,2</sup>  
(<sup>1</sup>Grad. Sch. Eng., Univ. Tokyo, <sup>2</sup>Grad. Sch. Med., Univ. Tokyo)
- 16:30** 3Gp14 Tag-free antibody fragment modification using crosslinking enzymes via proximity effect  
.....Koki Murozono<sup>1</sup>, Riko Nishioka<sup>1</sup>, Kazuki Uchida<sup>1</sup>, Yoshiro Kawaguchi<sup>1</sup>,  
Michio Kimura<sup>1</sup>, Noriho Kamiya<sup>1,2</sup>  
(<sup>1</sup>Grad. Sch. Eng., Kyushu Univ., <sup>2</sup>CFC, Kyushu Univ.)
- 16:42** 3Gp15 Development of a novel fusion protein for labeling native antibodies with controllable modification sites  
.....Riko Nishioka<sup>1</sup>, Koki Murozono<sup>1</sup>, Kazuki Uchida<sup>1</sup>, Yoshiro Kawaguchi<sup>1</sup>,  
Michio Kimura<sup>1</sup>, Noriho Kamiya<sup>1,2</sup>  
(<sup>1</sup>Grad. Sch. Eng., Kyushu Univ., <sup>2</sup>CFC, Kyushu Univ.)
- 16:54** 3Gp16 Visualization of the intracellular IP3 dynamics by genetically-encoded biosensors based on GFP  
.....Li Tian<sup>1</sup>, Keisuke Yamashita<sup>1</sup>, Zixu Feng<sup>1</sup>, Takashi Tsuboi<sup>2</sup>,  
Takanobu Yasuda<sup>3</sup>, Bo Zhu<sup>3</sup>, Tetsuya Kitaguchi<sup>3</sup>  
(<sup>1</sup>Sch. Life Sci. Technol, Tokyo Tech, <sup>2</sup>Grad. Sch. Arts Sci., Univ. Tokyo, <sup>3</sup>CLS, Tokyo Tech)

## Room H West Bldg. 3, W3-207 (13:30–16:30)

### 【Antibody Engineering; Invited Lecture】

- 13:30** 3Hp01 <Invited Lecture>  
THP-1 monocyte as a versatile tool for molecular biotechnology research  
.....Montarop Yamabhai (Mol. Biotechnol. Lab., Sch. Biotechnol., Suranaree Univ. Technol., Thailand)

- 13:54 3Hp03 Development of affinity maturation techniques for anti-PA-tag antibodies using ribosomal display and microbial secreted expression systems  
 .....○Anri Okada<sup>1</sup>, Hideo Nakano<sup>1</sup>, Teruyo Kato<sup>1</sup>, Monami Kihara<sup>1</sup>, Rio Okuda<sup>2</sup>  
 (1 Grad. Sch. Bioagric., Sci., Nagoya Univ., 2 Grad. Sch. Eng., Univ. Tokyo)
- 14:06 3Hp04 CDR grafting of anti-coronavirus single chain antibodies  
 .....○Nijiho Saito<sup>1</sup>, Yoshihide Makino<sup>2</sup>, Tamotsu Kanai<sup>2</sup>  
 (1 Grad. Sch. Bio. Pha. Eng., Toyama Pref. Univ., 2 Fac. Eng., Toyama Pref. Univ.)
- 14:18 3Hp05 Development of a Method for Obtaining Anti intestinal bacteria Human Monoclonal Antibody by Ribosomal Display  
 .....○Monami Kihara, Teruyo Kato, Sayaka Kondo, Yukine Yokoo, Hideo Nakano  
 (Grad. Sch. Bioagric., Sci., Nagoya Univ.)
- 14:30 Break
- 14:42 3Hp06 Antibody epitope binning through mammalian cell display and DNA sequencing  
 .....○Ning Lin, Kotaro Miyamoto, Takumi Ogawara, Tetsuya Kadonosono  
 (Sch. Life Sci. Technol, Tokyo Tech)
- 14:54 3Hp07 Rapid and simple preparation of cell aggregates by dielectrophoresis for highly effective generation of hybridoma cells  
 .....○Yushi Isozaki, Masato Suzuki, Tomoyuki Yasukawa (Grad. Sch. Sci., Univ. Hyogo.)
- 15:06 3Hp08 <Topics>  
 Development of functional intracellular antibody (intrabody) by AI-based design and live imaging-based evaluation  
 .....○Daiki Maejima<sup>1</sup>, Yuko Sato<sup>1,2</sup>, Timothy Stasevich<sup>2,3</sup>, Hiroshi Kimura<sup>1,2</sup>  
 (1 Sch. Life Sci. Technol, Tokyo Tech, 2 IIR, Tokyo Tech, 3 Colorado State Univ.)
- 15:18 3Hp09 Effect of cell passage number on the structure of produced antibodies found with the direct molecular observation method in solution  
 .....○Takashi Matsumoto<sup>1</sup>, Akimi Sato<sup>2</sup>, Takuma Kozono<sup>2</sup>, Takashi Tonozuka<sup>2</sup>,  
 Takashi Sato<sup>1</sup>, Tomokazu Hasegawa<sup>1</sup>, Hiroyuki Kanda<sup>1</sup>, Atsushi Nishikawa<sup>2</sup>  
 (1 Rigaku Corporation, 2 Tokyo Univ. Agric. Technol.)
- 15:30 3Hp10 Exploration of quiescent cancer cell markers by gene expression analysis of a quiescence-inducible cell model  
 .....○Koki Kamijo<sup>1</sup>, Kotaro Miyamoto<sup>1</sup>, Shinae Kondoh<sup>1,2</sup>, Tetsuya Kadonosono<sup>1</sup>  
 (1 Sch. Life Sci. Technol, Tokyo Tech, 2 Nara Natl. Coll. Technol.)
- 15:42 Break
- 15:54 3Hp11 Fabrication of bioluminescence-based immunosensors using coiled-coil peptides  
 .....○Takanobu Yasuda<sup>1</sup>, Haruki Kurata<sup>2</sup>, Bo Zhu<sup>1</sup>, Hiroshi Ueda<sup>1</sup>, Tetsuya Kitaguchi<sup>1</sup>  
 (1 IIR, Tokyo Tech, 2 Sch. Life Sci. Technol, Tokyo Tech)
- 16:06 3Hp12 Gene expression utilizing different BCR signaling pathways in response to varying strengths of antigenic stimulation  
 ..... Wakana Ono, Nozomi Ysufuku, Ryoya Yamanishi, Yuta Ito,  
 Natsumi Kurosaki, ○Naoki Kanayama  
 (Grad. Sch. ISEHS., Okayama Univ.)
- 16:18 3Hp13 Interaction kinetics analysis of a three-split luciferase-based open sandwich homogeneous immunoassay for mathematical model generation  
 .....○Bo Zhu<sup>1</sup>, Rianto Sato<sup>2</sup>, Lauren Rogers<sup>3</sup>, Abbie Bui<sup>3</sup>,  
 Takanobu Yasuda<sup>1</sup>, Hiroshi Ueda<sup>1</sup>, Naohiro Kato<sup>3</sup>, Tetsuya Kitaguchi<sup>1</sup>  
 (1 IIR, Tokyo Tech, 2 Sch. Life Sci. Technol., Tokyo Tech, 3 Dept. Biol. Sci., Louisiana State Univ.)

## Room I West Bldg. 2, W2-401 (13:30–17:06)

### 【Biomass, Bioresource and Energy Engineering】

- 13:30** 3Ip01 Conversion of CO<sub>2</sub> into useful lipids by Gas-to-Lipids bioprocess  
 .....○Kenshi Watanabe<sup>1</sup>, Setsu Kato<sup>1</sup>, Yutaka Nakashimada<sup>1</sup>, Masashi Matsuura<sup>2</sup>, Tsunehiro Aki<sup>1</sup>  
 (1 Grad. Sch. Integr. Sci. Life, Hiroshima Univ., 2 Chugoku Electric Power Co., Inc.)
- 13:42** 3Ip02 Development of the world's most efficient smart biometanation system for methane production from CO<sub>2</sub>  
 .....○Takahiro Suzuki<sup>1</sup>, Miu Suzuki<sup>1</sup>, Kazuto Doko<sup>1</sup>, Masaru Sakamoto<sup>1</sup>,  
 Daisuke Hiroshima<sup>2</sup>, Masashi Takeda<sup>3</sup>, Osamu Kaiya<sup>4</sup>  
 (1 Grad. Sch. Biology-Oriented Sci. Technol., Kindai Univ., 2 Water Agency Inc., 3 Daiki, 4 Yui-Nou Design)
- 13:54** 3Ip03 (Withdrawn)
- 14:06** 3Ip04 Enhanced L-lactic acid production using thermotolerant lactic acid bacteria from corn cobs by simultaneous  
 saccharification and fermentation at high temperature  
 .....○Kirika Ogawa, Yoichi Kumada, Jun-ichi Horiuchi (Grad. Sch. Sci. Technol., Kyoto Inst. Technol.)
- 14:18** 3Ip05 Gas fermentation combined with water electrolysis for production of isopropanol from CO<sub>2</sub> by engineered  
*Ralstonia eutropha*  
 ..... Gabriele Di Stadio, Subagyo Dyah, Izumi Orita, Ryuhei Nakamura, ○Toshiaki Fukui  
 (Sch. Life Sci. Technol, Tokyo Tech)
- 14:30** Break
- 14:42** 3Ip06 Production of valuable chemicals from seaweed (nori) processing residues by the halophilic bacterium  
*Halomonas elongata*  
 .....○Sae Tanaka<sup>1</sup>, Kotone Yamamoto<sup>1</sup>, Aoi Kaji<sup>1</sup>, Hideki Nakayama<sup>2</sup>,  
 Kiyotaka Hara<sup>3</sup>, Fumiyo Okazaki<sup>1</sup>  
 (1 Grad. Sch. Bioresour., Mie Univ., 2 Grad. Sch. Fish. Sci. Environ. Stud., Nagasaki Univ.,  
 3 Sch. Food Nutr. Sci., Univ. Shizuoka.)
- 14:54** 3Ip07 Production of terephthalic acid by simple and fully biochemical process from pretreated lignocellulosic  
 biomass  
 .....○Seiji Nakagame (Fac. Eng., Kanagawa Inst. Technol.)
- 15:06** 3Ip08 Development of a method for assessing marine bioresources by combining environmental DNA  
 metabarcoding and passive acoustic monitoring  
 .....○Yuto Hiraki<sup>1,2</sup>, Kotaro Tanaka<sup>3</sup>, Yohei Nishikawa<sup>2,4</sup>, Mengyao Zhu<sup>3</sup>,  
 Katsuhiko Mineta<sup>2,4,5</sup>, Tomonari Akamatsu<sup>4</sup>, Haruko Takeyama<sup>1,2,4,6</sup>  
 (1 Grad. Sch. Adv. Sci. Eng., Waseda Univ., 2 CBBDOIL, AIST-Waseda Univ.,  
 3 Sasagawa Peace Foundation, 4 Res. Org. Nano Life Innov., Waseda Univ., 5 MaOI,  
 6 Inst. Adv. Res. Biosyst. Dyn., Waseda Res. Inst. Sci. Eng., Waseda Univ.)
- 15:18** 3Ip09 Eliminating metabolic bottlenecks in the production of useful substances from Terephthalic acid by  
 acquiring Protocatechuic acid-resistant strains  
 .....○Shunsuke Tanaka, Kaori Yamasaki, Toshiaki Nakajima  
 (Grad. Sch. Life Environ. Sci., Univ. Tsukuba)
- 15:30** 3Ip10 Chemical synthesis of non-natural sugars and their utilization for microbial biomanufacturing  
 .....○Hiro Tabata<sup>1</sup>, Hiroaki Nishijima<sup>1</sup>, Yuki Yamada<sup>1</sup>, Rika Miyake<sup>1</sup>,  
 Keisuke Yamamoto<sup>2</sup>, Souichiro Kato<sup>1,3</sup>, Shuji Nakanishi<sup>1</sup>  
 (1 Grad. Sch. Eng. Sci., Osaka Univ., 2 Green Earth Institute, 3 BPRI, AIST)
- 15:42** Break
- 15:54** 3Ip11 Energy conversion from industrial waste to lipid by oleaginous yeast  
 .....○Hiroyuki Kajiura<sup>1,2</sup>, Shin Yoshimoto<sup>3</sup>, Ryo Misaki<sup>1,2</sup>, Kazuhito Fujiyama<sup>1,2</sup>  
 (1 ICBiotech, Osaka Univ., 2 OTRI, Osaka Univ., 3 Grad. Sch. Eng., Osaka Univ.)

- 16:06** 3Ip12 Biostimulant production by budding yeast using spent coffee grounds extract  
 .....○Natsuki Kawachi<sup>1</sup>, Yoko Hirono<sup>2</sup>, Hiroshi Kikukawa<sup>1,2</sup>, Masatoshi Hakamata<sup>3</sup>,  
 Hiroshi Takagi<sup>3</sup>, Kiyotaka Hara<sup>1,2</sup>  
 (<sup>1</sup>Grad. Sch. Integr. Pharm. Nutr. Sci., Univ. Shizuoka, <sup>2</sup>Sch. Food Nutr. Sci., Univ. Shizuoka.,  
<sup>3</sup>Numazu Technical Support Center Industrial Research Institute of Shizuoka Prefecture)
- 16:18** 3Ip13 Creation of solid-state photo biofuel cells and determination for optimal fuel composition  
 .....○Hitoki Semizo, Shoma Nishizaki, Naoko Washio, Hinako Kawakami, Yasumitsu Matsuo  
 (Sci. Eng., Setsunan Univ.)
- 16:30** 3Ip14 Bio-based supramolecular material for accelerating plastics biodegradation  
 .....○Toma Onari<sup>1</sup>, Makoto Ashiuchi<sup>2</sup>, Yuichi Hakumai<sup>2</sup>  
 (<sup>1</sup>United Grad. Sch. Agric. Sci., Ehime Univ., <sup>2</sup>PlatiFarm Co., Ltd.)
- 16:42** 3Ip15 Construction of cobalt phosphide carbon composite using phosphorus-accumulating yeast cells as a skeleton  
 .....○Itto Tokiwa, Riho Akiyoshi, Yoshihiro Ojima, Masayuki Azuma  
 (Grad. Sch. Eng., Osaka Metro. Univ.)
- 16:54** 3Ip16 Extraction of bioactive ingredients from food residues using aqueous solutions of betaine derivatives  
 .....○Gou Kokumai, Takuma Nakai, Kazuya Koumoto (FIRST, Konan Univ.)

## Room J West Bldg. 2, W2-402 (13:30–16:42)

### 【Bioremediation; Environmental Technology, Wastewater Treatment】

- 13:30** 3Jp01 Optimization of operation conditions in an ethanol-fed sulfate-reducing bioreactor for the treatment of acid mine drainage  
 .....○Hiroshi Habe<sup>1</sup>, Yuya Sato<sup>1</sup>, Takaya Hamai<sup>2</sup>, Yusei Masaki<sup>2</sup>, Hiroshi Aoki<sup>1</sup>  
 (<sup>1</sup> Environ. Manage. Res. Inst., AIST, <sup>2</sup>JOGMEC)
- 13:42** 3Jp02 Elucidation of arsenic removal mechanism of acid tolerant bacteria from acid mine drainage  
 .....○Sohei Iwama, Chikara Takano, Kazunori Nakashima, Satoru Kawasaki  
 (Grad. Sch. Eng., Hokkaido Univ.)
- 13:54** 3Jp03 Environmental remediation of deposit site in the mine with plant-bacteria interaction  
 .....○Yurika Kimoto, Chikara Takano, Kazunori Nakashima (Grad. Sch. Eng., Hokkaido Univ.)
- 14:06** 3Jp04 Study on the adsorption sites of divalent lead ions in the green alga *Penium margaritaceum*  
 .....○Tsogjargal Byamba<sup>1</sup>, Isamu Maeda<sup>1,2</sup> (<sup>1</sup>United Grad. Sch. Agric. Sci., Tokyo Univ. Agric. Technol.,  
<sup>2</sup>Fac. Agric., Utsunomiya Univ.)
- 14:18** 3Jp05 Functionalization of ferritin for metal recovery  
 .....○Fumiya Otani, Kazunori Nakashima, Ayako Yokohira, Chikara Takano, Satoru Kawasaki  
 (Grad. Sch. Eng., Hokkaido Univ.)
- 14:30** Break
- 14:42** 3Jp06 <Topics>  
 Isolation and characterization of a novel halotolerant bacterium, *Malaciobacter* sp. UFI-3, capable of reducing selenite and producing crystalline selenium  
 .....○Yuki Furuta, Tomoya Ishibashi, Daisuke Inoue, Michihiko Ike (Grad. Sch. Eng., Osaka Univ.)
- 14:54** 3Jp07 Surbey for useful microorganisms for sub-seafloor resource development from marine rock samples  
 .....○Satoshi Wakai, Masahiro Ogawa, Kanae Kobayashi (JAMSTEC)

- 15:06** 3Jp08 Screening and environmental distribution survey of chemoautotrophic bacteria utilizing phosphite as an energy source by anaerobic enrichment culture  
 .....○Takafumi Yamanaka, Cao Thi Thuy Linh, Junya Kato, Yusuke Nishigaki, Takenori Ishida, Takeshi Ikeda, Hisakage Funabashi, Yutaka Nakashimada, Akio Kuroda, Ryuichi Hirota  
 (Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)
- 15:18** 3Jp09 Kinetic characteristics in the degradation of chloroethenes by *Pseudonocardia* sp. D17  
 .....○Shinpei Fujiwara, Ryugo Nishimine, Daisuke Inoue, Michihiko Ike (Grad. Sch. Eng., Osaka Univ.)
- 15:30** 3Jp10 Identification of the cytochrome P450 involved in the metabolism of environmental pollutants by the hyper lignin-degrading fungus *Phanerochaete sordida* YK-624  
 .....○Ru Yin<sup>1</sup>, Yuta Nayuki<sup>2</sup>, Akiko Ono<sup>3,4</sup>, Toshio Mori<sup>5</sup>, Hirokazu Kawagishi<sup>4,5</sup>, Hirofumi Hirai<sup>3,4,6</sup>  
 (<sup>1</sup> Grad. Sch. Sci. Technol. Shizuoka Univ., <sup>2</sup> Grad. Sch. Integr. Sci. Technol., Shizuoka Univ., <sup>3</sup> Fac. Glb. Interdiscip. Sci. Imov., Shizuoka Univ., <sup>4</sup> Res. Inst. Mushroom Sci., Shizuoka Univ., <sup>5</sup> Fac. Agric., Shizuoka Univ., <sup>6</sup> Res. Inst. Green Sci. Technol., Shizuoka Univ.)
- 15:42** Break
- 15:54** 3Jp11 Degradation mechanism of acetaminophen and ibuprofen by the hyper lignin-degrading fungus *Phanerochaete sordida* YK-624  
 .....○Wonhi Park<sup>1</sup>, Akiko Ono<sup>2,3</sup>, Jing Wu<sup>3,4</sup>, Toshio Mori<sup>3,4</sup>, Hirokazu Kawagishi<sup>3,4</sup>, Hirohumi Hirai<sup>2,4,5</sup>  
 (<sup>1</sup> Grad. Sch. Integr. Sci. Technol., Shizuoka Univ., <sup>2</sup> Fac. Glb. interdiscip. Sci. Innov., Shizuoka Univ., <sup>3</sup> Res. Inst. for Mushroom Sci., Shizuoka Univ., <sup>4</sup> Fac. Agric., Shizuoka Univ., <sup>5</sup> Res. Inst. Green Sci. Technol., Shizuoka Univ.)
- 16:06** 3Jp12 Construction and application of heterologous cytochrome P450 genes expression system from hyper lignin-degrading fungus *Phanerochaete sordida* YK-624  
 .....○Yuta Nayuki<sup>1</sup>, Ruka Matsuura<sup>1</sup>, Ru Yin<sup>2</sup>, Haruka Yamada<sup>3</sup>, Chuichiro Otomaru<sup>3</sup>, Akiko Ono<sup>4,5</sup>, Hirofumi Ichinose<sup>6</sup>, Toshio Mori<sup>3</sup>, Hirokazu Kawagishi<sup>3,5</sup>, Hirofumi Hirai<sup>4,5,7</sup>  
 (<sup>1</sup> Grad. Sch. Integr. Sci. Technol., Shizuoka Univ., <sup>2</sup> Grad. Sch. Sci. Technol. Shizuoka Univ., <sup>3</sup> Fac. Agric., Shizuoka Univ., <sup>4</sup> Fac. Glb. interdiscip. Sci. Innov., Shizuoka Univ., <sup>5</sup> Res. Inst. for Mushroom Sci., Shizuoka Univ., <sup>6</sup> Grad. Sch. Agric., Kyushu Univ., <sup>7</sup> Res. Inst. Green Sci. Technol., Shizuoka Univ.)
- 16:18** 3Jp13 Development of the subset analysis method to elucidate functional interactions in microbial communities  
 .....○Miku Kito<sup>1</sup>, Yui Nomura<sup>2</sup>, Hidehiro Ishizawa<sup>1</sup>, Masahiro Takeo<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Eng., Univ. Hyogo, <sup>2</sup> Sch. Eng., Univ. Hyogo)
- 16:30** 3Jp14 Bottom-up approach for understanding of microbial community stable states  
 .....○Tetsu Tanaka<sup>1</sup>, Yosuke Tashiro<sup>1,2</sup>, Yasuhisa Saito<sup>3</sup>, Takashi Okada<sup>4</sup>, Hiroyuki Futamata<sup>1,2,5</sup>  
 (<sup>1</sup> Grad. Sch. Integr. Sci. Technol., Shizuoka Univ., <sup>2</sup> Grad. Sch. Sci. Technol. Shizuoka Univ., <sup>3</sup> Fac. Sci. and Eng. Shimane Univ., <sup>4</sup> Inst. Life and Med. Sci. Kyoto Univ., <sup>5</sup> Res. Inst. Green Sci. Technol., Shizuoka Univ.)

## Room K Main Bldg., M-B07 (13:30–16:30)

### 【Brewing, Brewing Technology; Food Science, Food Technology】

- 13:30** 3Kp01 Comparative Analysis of Ethanol Fermentation in Media Utilizing Single Nitrogen Source Amino Acids  
 .....○Takeo Miki, Yuri Oguchi (Integr. Grad. Sch. Med. Eng. Agric. Sci, Univ. Yamanashi)

- 13:42 3Kp02 Transcriptome profile and fermentation property of the wild yeast strain GY115 in ale beer brewing  
 ..... Miu Naruse<sup>1</sup>, Kentaro Hisamatsu<sup>2</sup>, Yoshinori Sawai<sup>2</sup>, Akihiro Yoshimura<sup>2</sup>,  
 Masaya Shimada<sup>1</sup>, ○Tomoyuki Nakagawa<sup>1</sup>  
 (<sup>1</sup> Fac. Appl. Biol. Sci., Gifu Univ., <sup>2</sup> Gifu Pref. Inst. Food Sci.)
- 13:54 3Kp03 The relationship between triphenyl tetrazolium chloride (TTC) staining activity and sake quality in sake yeasts  
 ..... ○Kazuko Tomonaga, Shiori Takase, Kota Watanabe, Toshimori Kadokura, Shunichi Nakayama  
 (Fac. Appl. Biosci., Tokyo Univ. Agric.)
- 14:06 3Kp04 Analysis of heterochromatin protein 1 in *Aspergillus luchuensis* mut. *kawachii*  
 ..... Atsushi Nishitani<sup>1</sup>, Kentaro Hiramatsu<sup>1</sup>, Chihiro Kadooka<sup>2</sup>, Kazuki Mori<sup>3</sup>, Kayu Okutsu<sup>4</sup>,  
 Yumiko Yoshizaki<sup>1,4</sup>, Kazunori Takamine<sup>1,4</sup>, Kosuke Tashiro<sup>3</sup>, Masatoshi Goto<sup>1,5</sup>,  
 Hisanori Tamaki<sup>1,4</sup>, ○Taiki Futagami<sup>1,4</sup>  
 (<sup>1</sup> United Grad. Sch. Agric. Sci., Kagoshima Univ., <sup>2</sup> Fac. Biotechnol. Life Sci., Sojo Univ.,  
<sup>3</sup> Grad. Sch. Agric., Kyushu Univ., <sup>4</sup> Fac. Agric., Kagoshima Univ., <sup>5</sup> Fac. Agric., Saga Univ.)
- 14:18 3Kp05 Analysis of the life cycle of katsuobushi fungus *Aspergillus chevalieri*  
 ..... ○Kentaro Hiramatsu<sup>1</sup>, Kazuki Mori<sup>2</sup>, Chihiro Kadooka<sup>3</sup>, Kayu Okutsu<sup>4</sup>, Yumiko Yoshizaki<sup>1,4</sup>,  
 Kazunori Takamine<sup>1,4</sup>, Kosuke Tashiro<sup>2</sup>, Masatoshi Goto<sup>1,5</sup>, Hisanori Tamaki<sup>1,4</sup>, Taiki Futagami<sup>1,4</sup>  
 (<sup>1</sup> United Grad. Sch. Agric. Sci., Kagoshima Univ., <sup>2</sup> Grad. Sch. Agric., Kyushu Univ.,  
<sup>3</sup> Fac. Biotechnol. Life Sci., Sojo Univ., <sup>4</sup> Fac. Agric., Kagoshima Univ., <sup>5</sup> Fac. Agric., Saga Univ.)
- 14:30 Break
- 14:42 3Kp06 Hypoxia stress response of *Aspergillus oryzae* in soy sauce *koji*  
 ..... ○Yoshika Murayama<sup>1</sup>, Kanae Sakai<sup>2</sup>, Takumi Tanaka<sup>2</sup>, Liyun Liu<sup>2</sup>,  
 Norihiro Magishi<sup>1</sup>, Ken-Ichi Kusumoto<sup>2</sup>  
 (<sup>1</sup> Higashimaru Shoyu Co.,Ltd, <sup>2</sup> Grad. Sch. Eng., Osaka Univ.)
- 14:54 3Kp07 Analysis of lignin-related compounds that affect the growth and morphology of the ascomycetous filamentous fungus *Aspergillus oryzae*  
 ..... ○Takumi Tanaka, Liyun Liu, Kanae Sakai, Ken-ichi Kusumoto (Grad. Sch. Eng., Osaka Univ.)
- 15:06 3Kp08 Induction of phenolic acid decarboxylase from *Aspergillus luchuensis*  
 ..... ○Kazuki Ura<sup>1</sup>, Aya Matsuo<sup>2</sup>, Shusaku Yoshida<sup>3</sup>, Toki Taira<sup>3</sup>,  
 Jun Yoshikawa<sup>1,2</sup>, Kenji Machashi<sup>1,2</sup>, Mayumi Maeda<sup>2</sup>  
 (<sup>1</sup> Grad. Sch. Appl. Biosci., Tokyo Univ. Agric., <sup>2</sup> Fac. Appl. Biosci., Tokyo Univ. Agric.,  
<sup>3</sup> Fac. Agric., Univ. Ryukyus)
- 15:18 3Kp09 Functional analysis of acid phosphatase in *Aspergillus oryzae* related to dashi containing miso production  
 ..... ○Kanae Sakai<sup>1</sup>, Tadahiro Suzuki<sup>2</sup>, Yuichiro Horii<sup>3</sup>, Yutaka Wagu<sup>4</sup>, Ken-Ichi Kusumoto<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Eng., Osaka Univ., <sup>2</sup> NARO, <sup>3</sup> Niigata Food Res. Center, <sup>4</sup> Bio'c Co., Ltd.)
- 15:30 3Kp10 Exploration of factors involved in heterologous protein production in *Aspergillus oryzae* by the activation tag method  
 ..... ○Saya Hirano<sup>1</sup>, Akihiro Baba<sup>1</sup>, Ayami Mori<sup>1</sup>, Taro Matsuoka<sup>1</sup>, Saiko Watanabe<sup>1</sup>,  
 Itsuki Inoue<sup>2</sup>, Gen-ya Arakawa<sup>1</sup>, Hitoshi Shindo<sup>1</sup>, Masahumi Tokuoka<sup>1</sup>  
 (<sup>1</sup> Grad. Sch. Fac. Appl. Biosci., Tokyo Univ. Agric., <sup>2</sup> Fac. Appl. Biosci., Tokyo Univ. Agric.)
- 15:42 Break
- 15:54 3Kp11 Identification of adenosine deaminase in *Aspergillus oryzae*  
 ..... ○Yoshiki Asai, Hiroaki Negoro, Hiroki Ishida (Res. Inst., Gekkeikan Sake Co., Ltd.)
- 16:06 3Kp12 Enhancing the functional properties of kamaboko, a heated Alaska pollock surimi, through lactic acid fermentation  
 ..... ○Kazuya Kobayashi<sup>1</sup>, Yuki Matsubara<sup>1</sup>, Hiroaki Okuhara<sup>1</sup>, Natsuka Takada<sup>2</sup>, Masaki Oosaka<sup>2</sup>  
 (<sup>1</sup> Niigata Pref. Agric. Res. Inst. Food Res. Center, <sup>2</sup> Ichimasa Kamaboko Co., Ltd.)
- 16:18 3Kp13 Fruiting body cultivation of *Cordyceps militaris* using brewer's spent grain  
 ..... ○Masahiro Nogawa, Ami Miike, Shintaro Oka (Fac. Textile Sci. Technol., Shinshu Univ.)

## Room L Main Bldg., M-103 (13:30–15:18)

### 【Bioinformatics; Systems Biology】

- 13:30 3Lp01 Control of bioprocess with Complex Microbial Engineering: Development of species-level metabolic analysis method for meta-fermentation using microbiome and estimation of species-specific productivity  
 ..... ○Kanta Kajimoto<sup>1</sup>, Tomonori Koga<sup>1</sup>, Mitsuoki Ishizu<sup>1</sup>, Hirokuni Miyamoto<sup>2,3,4</sup>, Hiroyuki Hamada<sup>1</sup>, Kenzi Sakai<sup>1</sup>, Mugihito Oshiro<sup>1</sup>, Yukihiko Tashiro<sup>1</sup>  
 (1 Grad. Sch. Bioresour. Bioenviron. Sci., Kyushu Univ., 2 Fac. Horticul., Chiba Univ., 3 IMS,RIKEN, 4 Sermas Co., Ltd)
- 13:42 3Lp02 Development of arginine metabolic flux measurement in macrophage-like THP-1  
 ..... ○Takeo Taniguchi<sup>1</sup>, Nobuyuki Okahashi<sup>1</sup>, Junko Iida<sup>2</sup>, Fumio Matsuda<sup>1</sup>  
 (1 Grad. Sch. IST, Osaka Univ., 2 Shimadzu Corp.)
- 13:54 3Lp03 A database that tracks genetic evolution for all organisms  
 ..... ○Aiko Fukagawa (Grad. Sch. Agric., Osaka Metro. Univ.)
- 14:06 3Lp04 <Topics>  
 Development of a tool to analyze base frequency patterns over a wide area  
 ..... ○Taichi Wakamatsu<sup>1</sup>, Shotaro Yamasaki<sup>1,2</sup>, Ko Kato<sup>1,3</sup>  
 (1 Grad. Sch. Biol. Sci., NAIIST, 2 OUBIC, RIMD, Osaka Univ., 3 CDG, NAIIST)
- 14:18 3Lp05 Development of *in silico/in vitro* method for *de novo* peptide nanopore evolution  
 ..... ○Mana Sato<sup>1</sup>, Shoko Fujita<sup>1</sup>, Tomoaki Matsuura<sup>2</sup>, Ryuji Kawano<sup>1</sup>  
 (1 Grad. Sch. Eng., Tokyo Univ. Agric. Technol., 2 ELSI, Tokyo Tech.)
- 14:30 Break
- 14:42 3Lp06 *In silico* turn sequence design for controlling the number of associations of beta-barrel nanopores  
 ..... ○Yuna Hirokawa<sup>1</sup>, Mana Sato<sup>2</sup>, Yuki Hagiri<sup>2</sup>, Ryuji Kawano<sup>1,2</sup>  
 (1 Undergrad. Sch. Eng., Tokyo Univ. Agric. Technol., 2 Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)
- 14:54 3Lp07 Nanopore Measurement with Neural Network for miRNA Identification  
 ..... ○Soma Emura, Fumika Kambara, Akihiro Tamotsu, Ryuji Kawano  
 (Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)
- 15:06 3Lp08 Genomic information analysis for extraction and visualization of sets of genes involved in target enzyme function  
 ..... ○Tomoyuki Kosaka<sup>1,2</sup>, Minenosuke Matsutani<sup>3</sup> (1 RCTMR, Yamaguchi Univ., 2 Grad Sch Sci Tech Innov, Yamaguchi Univ., 3 Bioindustry, Tokyo Univ of Agri)

## Room M Main Bldg., M-123 (13:30–16:54)

### 【Cell Culture Engineering; Bioprocess Engineering】

- 13:30 3Mp01 Limited tryptic digestion of membrane-binding form of methane monooxygenase  
 ..... ○Akimitsu Miyaji (Sch. Mater. Chem. Technol., Tokyo Tech)
- 13:42 3Mp02 Role of internal disulfide bond for functional expression of mammalian odorant receptors  
 ..... ○Nonoko Muto<sup>1</sup>, Miki Takeda<sup>1</sup>, Hiroaki Matsunami<sup>2</sup>, Masafumi Yohda<sup>1</sup>, Yosuke Fukutani<sup>1</sup>  
 (1 Grad. Sch. Eng., Tokyo Univ. Agric. Technol., 2 Dept of Mol. Genet. and Microbiol., Duke Univ. Sch. Med.)
- 13:54 3Mp03 Adhesion analysis of the bacterial adhesive protein AtaA by atomic force microscopy  
 ..... ○Shogo Yoshimoto, Katsutoshi Hori (Grad. Sch. Eng., Nagoya Univ.)



- 14:06** 3Mp04 Establish of small-scale fed-batch culture method for hyphae-dispersed strain of *Aspergillus oryzae*  
 .....○Yuki Niikawa<sup>1</sup>, Makoto Fujisawa<sup>1</sup>, Syunya Susukida<sup>2</sup>, Soma Araki<sup>2</sup>, Shengling Xiao<sup>2</sup>,  
 Taisei Amimoto<sup>3</sup>, Yasuhiro Baba<sup>1</sup>, Yoshikazu Kato<sup>4</sup>, Takeaki Taniguchi<sup>5</sup>,  
 Keietsu Abe<sup>2</sup>, Eiji Nagamori<sup>3</sup>, Hirofumi Horiguchi<sup>1</sup>  
 (<sup>1</sup>Godo Shusei Co., Ltd., <sup>2</sup>Grad. Sch. Agric. Sci., Tohoku Univ., <sup>3</sup>Grad. Sch. Eng., Osaka Inst. Technol.,  
<sup>4</sup>Satake Multimix Corp., <sup>5</sup>BPRI, AIST)
- 14:18** 3Mp05 Optimization of culture conditions for a mycelial dispersal strain of *Aspergillus oryzae* using design of experiments  
 .....○Hironobu Amimoto<sup>1</sup>, Yasuhiro Baba<sup>2</sup>, Hideki Oda<sup>1</sup>, Shunya Susukida<sup>3</sup>,  
 Yosikazu Kato<sup>4</sup>, Hirohumi Horiguchi<sup>2</sup>, Keietsu Abe<sup>3</sup>, Eiji Nagamori<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. Eng., Osaka Inst. Technol., <sup>2</sup>Godo Shusei Co., Ltd.,  
<sup>3</sup>Grad. Sch. Agric. Sci., Tohoku Univ., <sup>4</sup>Satake Marutimikusu Co., Ltd.)
- 14:30** Break
- 14:42** 3Mp06 Exploring Freeze-Drying Techniques for Enhanced Red Blood Cells Preservation and Rapid Transfusion  
 .....○Tomoka Konoo<sup>1</sup>, Mizuki Kuniyoshi<sup>3</sup>, Junya Osaki<sup>1</sup>, Shota Suzuki<sup>2</sup>,  
 Hidemine Honda<sup>2</sup>, Tsuyoshi Takiuchi<sup>2</sup>, Tadashi Kimura<sup>2</sup>, Tetsusei Kurashiki<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. Eng., Osaka Univ., <sup>2</sup>Grad. Sch. Med., Osaka Univ., <sup>3</sup>ULVAC, Inc.)
- 14:54** 3Mp07 The relationship between water content and survival rate of red blood cells after freeze-drying  
 .....○Junya Osaki<sup>1</sup>, Mizuki Kuniyoshi<sup>2</sup>, Tomoka Konoo<sup>1</sup>, Shota Suzuki<sup>3</sup>,  
 Hidemine Honda<sup>3</sup>, Tsuyoshi Takiuchi<sup>3</sup>, Tadashi Kimura<sup>3</sup>, Tetsusei Kurashiki<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. Eng., Osaka Univ., <sup>2</sup>ULVAC, Inc., <sup>3</sup>Grad. Sch. Med., Osaka Univ.)
- 15:06** 3Mp08 Development of nanoparticulated CSF vaccine by silkworm-baculovirus expression system  
 .....○Daiki Kaneko<sup>1</sup>, Akitsu Masuda<sup>3</sup>, Yurina Kondou<sup>3</sup>, Kaori Wada<sup>3</sup>,  
 Hiroaki Mon<sup>2</sup>, Takahiro Kusakabe<sup>2</sup>, Jaeman Lee<sup>2</sup>  
 (<sup>1</sup>Grad. Sch. Bioresour. Bioenviron. Sci., Kyushu Univ., <sup>2</sup>Grad. Sch. Agric., Kyushu Univ.,  
<sup>3</sup>Fac. Agric., Kyushu Univ.)
- 15:18** 3Mp09 <Topics>  
 Odor discrimination using light-guided patterning of olfactory receptor-expressing cells  
 .....○Shinya Yamahira<sup>1</sup>, Hideo Mitsuno<sup>2</sup>, Ryohei Kanzaki<sup>2</sup>, Satoshi Yamaguchi<sup>1</sup>  
 (<sup>1</sup>SANKEN, Osaka Univ., <sup>2</sup>RCAST, Univ. Tokyo)
- 15:30** 3Mp10 High-throughput screening of amylase-producing microorganisms in the environment using water-in-oil droplet technology  
 .....○Sumire Kobayashi<sup>1,2</sup>, Miu Hoshino<sup>1,2</sup>, Akira Sasaki<sup>2</sup>, Satoko Matsukura<sup>2</sup>,  
 Yuri Ota<sup>2,3</sup>, Satoshi Tsuneda<sup>4</sup>, Naohiro Noda<sup>1,2,4</sup>  
 (<sup>1</sup>Grad. Sch. Front. Sci., Univ. Tokyo, <sup>2</sup>Biomed. Res. Inst., AIST,  
<sup>3</sup>OCBT Co., Ltd., <sup>4</sup>Sch. Adv. Sci. Eng., Waseda Univ.)
- 15:42** Break
- 15:54** 3Mp11 Development of the enzymatic method for DOPA-containing dipeptides with catecholamine metabolic activity in the brain  
 .....○Atsuya Hommoto<sup>1</sup>, ○Kanao Murakami<sup>1</sup>, Takashi Ichinose<sup>2</sup>, Toshihiro Nakamori<sup>2</sup>, Kuniki Kino<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. Adv. Sci. Eng., Waseda Univ., <sup>2</sup>FUJI OIL HOLDINGS INC.)
- 16:06** 3Mp12 Direct bioconversion of rice shavings into lipid by the amylolytic oleaginous yeast *Lipomyces starkeyi*  
 .....○Yuya Kaizu<sup>1</sup>, Rikako Sato<sup>1</sup>, Akihiro Nakamura<sup>2</sup>, Yosuke Shida<sup>2</sup>,  
 Wataru Ogasawara<sup>2</sup>, Harutake Yamazaki<sup>1</sup>, Hiroaki Takaku<sup>1</sup>  
 (<sup>1</sup>Fac. Appl. Life Sci., Niigata Univ. Pharm. Appl. Life Sci., <sup>2</sup>Nagaoka Univ. Technol.)
- 16:18** 3Mp13 Consideration of neutralizers in acetic acid continuous cultivation demonstration process from H<sub>2</sub>CO<sub>2</sub>  
 .....○Kousi Ueno<sup>1</sup>, Tsunehiro Aki<sup>1</sup>, Kensi Watanabe<sup>1</sup>, Masasi Matsuura<sup>2</sup>,  
 Tsukasa Yosizaki<sup>2</sup>, Katuyuki Okamine<sup>2</sup>, Yutaka Nakasimada<sup>1</sup>  
 (<sup>1</sup>Grad. Sch. Integr. Sci. Life, Hiroshima Univ., <sup>2</sup>The Chugoku Electric Power Company)

- 16:30 3Mp14 Investigation of the growth promotion mechanism of cyanobacteria *Synechococcus elongatus* PCC7942 by co-culture  
 .....○Pei Yu Tan<sup>1</sup>, Yuta Kato<sup>2</sup>, Tai-Ying Chiou<sup>3</sup>, Akihiro Hachikubo<sup>3</sup>, Masaaki Konishi<sup>3</sup>  
 (<sup>1</sup> Grad. Sch. Eng., Kitami Inst. Technol., <sup>2</sup> Kankyo Daizen Company, Ltd, <sup>3</sup> Kitami Inst. Technol.)
- 16:42 3Mp15 Synthetic medium conversion of MRS medium using culture substrate quantitative analysis data  
 .....○Yuwa Inaba<sup>1</sup>, Takuto Nakajima<sup>1</sup>, Kazuki Watanabe<sup>1</sup>, Masaaki Konishi<sup>2</sup>  
 (<sup>1</sup> Grad. Sch. Eng., Kitami Inst. Technol., <sup>2</sup> Kitami Inst. Technol.)

## Room N Main Bldg., M-124 (13:30–16:54)

### 【Biochemical Engineering】

- 13:30 3Np01 Isolation of intestinal microbes from rhinoceros beetle larvae fed with bagasse  
 .....○Yusuke Yatsushiro<sup>1</sup>, Hiroaki Kodama<sup>1</sup>, Syougo Hamamoto<sup>2</sup>  
 (<sup>1</sup> Grad. Sch. Horticult., Chiba Univ., <sup>2</sup> Sea Act Co., LTD)
- 13:42 3Np02 Effect of low shear and modeled-microgravity condition on the physiological activities of enteric useful bacteria and its application (part 4)  
 ..... Ayumi Kozu<sup>1</sup>, ○Shun Kawamori<sup>2</sup>, Hideki Aoyagi<sup>1,2,3</sup>  
 (<sup>1</sup> Grad. Sch. Deg. P. Agro-Bioresour. Sci. Technol., Univ. Tsukuba,  
<sup>2</sup> Coll. Agro-Bio. Resour. Sci., Univ. Tsukuba, <sup>3</sup> Inst. Life Environ. Sci., Univ. Tsukuba)
- 13:54 3Np03 Isolation and characterization of plant growth promoting bacteria using cellulose membrane plate (part 2)  
 ..... Yuto Fujiwara<sup>1</sup>, ○Takumi Nagasawa<sup>1</sup>, Chiharu Akimoto-Tomiya<sup>2</sup>, Hideki Aoyagi<sup>1,3</sup>  
 (<sup>1</sup> Grad. Sch. Deg. P. Agro-Bioresour. Sci. Technol., Univ. Tsukuba, <sup>2</sup> Inst. Agrobiological. Sci., NARO,  
<sup>3</sup> Inst. Life Environ. Sci., Univ. Tsukuba)
- 14:06 3Np04 Analysis of endotoxin-releasing characteristics of *Aggregatibacter actinomycetemcomitans* and its application (part 2)  
 ..... Rina Yoshizawa<sup>1</sup>, ○Mia Tanaka<sup>2</sup>, Miu Mochiduki<sup>2</sup>, Hideki Aoyagi<sup>1,2,3</sup>  
 (<sup>1</sup> Grad. Sch. Deg. P. Agro-Bioresour. Sci. Technol., Univ. Tsukuba,  
<sup>2</sup> Coll. Agro-Bio. Resour. Sci., Univ. Tsukuba, <sup>3</sup> Inst. Life Environ. Sci., Univ. Tsukuba)
- 14:18 3Np05 Exploring the variety of co2-reducing acetogenesis utilizing humin as an extracellular electron donor in acetogenic bacteria  
 .....○Biec Nhu Ha<sup>1</sup>, Takuya Kasai<sup>2</sup>, Takahiro Matsunaga<sup>3</sup>, Arata Katayama<sup>1</sup>  
 (<sup>1</sup> Institutes of Innovation for Future Society, Tokai National Higher Education and Research System,  
 Nagoya Univ., <sup>2</sup> AIST Hokkaido, <sup>3</sup> Nishinippon Plant Engineering and Construction Co., Ltd.)
- 14:30 Break
- 14:42 3Np06 Microalgae-derived basal medium for bovine myoblast cell culture  
 .....○Hikaru Kushima<sup>1</sup>, Sohgo Wakabayashi<sup>1</sup>, Shigemitsu Sobuku<sup>2</sup>, Jiro Nakata<sup>2</sup>, Kazuaki Ninomiya<sup>3</sup>  
 (<sup>1</sup> Grad. Sch. Nat. Sci. Technol., Kanazawa Univ., <sup>2</sup> Tengu Nakata Honten Co., Ltd.,  
<sup>3</sup> Ints. Frontier Sci. Initiative, Kanazawa Univ.)
- 14:54 3Np07 Serum-free culture of bovine myoblasts with conditioned medium from suspension culture of hepatoma cell line  
 .....○Kyoma Takagi<sup>1</sup>, Itsei Nakano<sup>1</sup>, Shigemitsu Sobuku<sup>2</sup>, Jiro Nakata<sup>2</sup>, Kazuaki Ninomiya<sup>3</sup>  
 (<sup>1</sup> Grad. Sch. Nat. Sci. Technol., Kanazawa Univ., <sup>2</sup> Tengu Nakata Honten Co., Ltd.,  
<sup>3</sup> Ints. Frontier Sci. Initiative, Kanazawa Univ.)

- 15:06** 3Np08 Suspension culture of bovine myoblast cells using edible microcarriers associated with bead-to bead transfer  
 ..... ○Takumi Ima<sup>1</sup>, Tatsuro Sakamoto<sup>1</sup>, Shigemitsu Sobuku<sup>2</sup>, Jiro Nakata<sup>2</sup>, Kazuaki Ninomiya<sup>3</sup>  
 (1 Grad. Sch. Nat. Sci. Technol., Kanazawa Univ.,<sup>2</sup> Tengu Nakata Honten Co., Ltd.,  
<sup>3</sup> Ints. Frontier Sci. Initiative, Kanazawa Univ.)
- 15:18** 3Np09 Fabrication of scaffold-free 3D bovine muscle tissue based on migration and fusions of multicellular spheroids  
 ..... ○Yukito Nakagami<sup>1</sup>, Tsugumi Arai<sup>1</sup>, Shigemitsu Sobuku<sup>2</sup>, Jiro Nakata<sup>2</sup>, Kazuaki Ninomiya<sup>3</sup>  
 (1 Grad. Sch. Nat. Sci. Technol., Kanazawa Univ.,<sup>2</sup> Tengu Nakata Honten Co., Ltd.,  
<sup>3</sup> Ints. Frontier Sci. Initiative, Kanazawa Univ.)
- 15:30** 3Np10 The development of an artificial biosynthetic pathway for the production of plant alkaloids in *Escherichia coli* and the evaluation of its simplicity  
 ..... ○Koko Nakata<sup>1</sup>, Toshiki Saito<sup>2</sup>, Christopher Vavricka<sup>3</sup>, Shunsuke Takahashi<sup>1</sup>  
 (1 Sch. Sci. Eng. Tokyo Denki Univ.,<sup>2</sup> Grad. Sch. Sci. Eng. Tokyo Denki Univ.,  
<sup>3</sup> Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)
- 15:42** Break
- 15:54** 3Np11 Production of ethanol and xylitol from biomass by co-cultivation of yeast  
 ..... ○Taiki Yamawaki, Yoichi Kumada, Jun-ichi Horiuchi (Grad. Sch. Sci. Technol., Kyoto Inst. Technol.)
- 16:06** 3Np12 Metabolic pathway analysis by disruption of putative toluene-metabolizing genes in *Acinetobacter* sp. Tol 5  
 ..... ○Maiko Hattori<sup>1</sup>, Shogo Yoshimoto<sup>1</sup>, Yuki Ohara<sup>2</sup>, Katsutoshi Hori<sup>1</sup>  
 (1 Grad. Sch. Eng., Nagoya Univ.,<sup>2</sup> Friend Microbe Inc.)
- 16:18** 3Np13 Aerobic fermentation production of polyhydroxyalkanoic acid (PHA) block copolymers with D-lactic acid (DLA) segments  
 ..... ○Seiya Tajika<sup>1</sup>, Shin-ichi Hachisuka<sup>1,2</sup>, Hiroshi Kikukawa<sup>1,2</sup>, Ken'ichiro Matsumoto<sup>1,2</sup>  
 (1 Grad. Sch. Chem. Sci. Eng., Hokkaido Univ.,<sup>2</sup> Grad. Sch. Eng., Hokkaido Univ.)
- 16:30** 3Np14 Control of bioprocess with Complex Microbial Engineering: Development of kinetic models that enable to estimate quantitatively and dynamically species-level metabolism in continuous meta-fermentation  
 ..... ○Tomonori Koga<sup>1</sup>, Kanta Kajimoto<sup>1</sup>, Hirokuni Miyamoto<sup>2,3,4</sup>, Hiroyuki Hamada<sup>1</sup>,  
 Kenji Sakai<sup>1</sup>, Mugihito Oshiro<sup>1</sup>, Yukihito Tashiro<sup>1</sup>  
 (1 Grad. Sch. Bioresour. Bioenviron. Sci., Kyushu Univ.,<sup>2</sup> Fac. Horticult., Chiba Univ.,<sup>3</sup> IMS,RIKEN,  
<sup>4</sup> Sermas. Co., Ltd)
- 16:42** 3Np15 Effects of suppressing photosynthetic activity on carotenoid biosynthesis in aerial microalgae  
 ..... ○Ami Ichikawa (Appl. Chem., Kogakuin Univ.)

## Room O Main Bldg., M-178 (13:30–16:30)

### 【Biosynthesis, Natural Organic Chemistry; Organic Chemistry, Polymer Chemistry】

- 13:30** 3Op01 Discovery of novel biocatalysts: identification of active molecules of plant-derived polysaccharides exhibiting asymmetric catalysis  
 ..... ○Yasuo Kato<sup>1</sup>, Koichi Wada<sup>2</sup>, Makoto Hibi<sup>1</sup>, Jun-ichi Enoki<sup>1</sup>,  
 Issei Osaka<sup>1</sup>, Tatsuhiro Asano<sup>2</sup>, Yuki Takeuchi<sup>2</sup>  
 (1 Biotechnol. Res. Center, Toyama Pref. Univ.,<sup>2</sup> Kyowa Pharma Chemical Co., Ltd.)
- 13:42** 3Op02 Analysis of vitamin D receptor binding affinities of enzymatically synthesized triterpenes  
 ..... ○Daijiro Ueda<sup>1</sup>, Natsu Matsuda<sup>1</sup>, Nami Hirai<sup>1</sup>, Yuka Takaba<sup>1</sup>, Mao Inoue<sup>1</sup>, Taichi Kameya<sup>1</sup>,  
 Nao Tagaya<sup>2</sup>, Kaori Yasuda<sup>2</sup>, Yasuhiro Isogai<sup>2</sup>, Yoshito Kakihara<sup>3</sup>, Tetsuro Shinada<sup>4</sup>, Tsutomu Sato<sup>1</sup>  
 (1 Grad. Sch. Sci. Technol., Niigata Univ.,<sup>2</sup> Fac. Eng., Toyama Pref. Univ.,  
<sup>3</sup> Grad. Sch. Med. Dent., Niigata Univ.,<sup>4</sup> Grad. Sch. Sci., Osaka Metro. Univ.)

- 13:54 3Op03 In consideration of liquid culture for Actinomycetes for producing antibiotics  
 .....○Yuta Kono<sup>1</sup>, Hironobu Otsuchi<sup>2</sup>, Ryusei Tsurugai<sup>2</sup>, Yuji Hatada<sup>1,2</sup>  
 (1 Fac. Eng., Saitama Inst. Technol., 2 Grad. Sch. Eng., Saitama Inst. Technol.)
- 14:06 3Op04 Induction and inhibition of antibiotics production of *Streptomyces* sp. TSP2-12 strain by  
 maltooligosaccharides  
 .....○Ryusei Tsurugai<sup>1</sup>, Hironobu Otsuchi<sup>1</sup>, Misaki Nakajima<sup>1</sup>, Yuta Kouno<sup>2</sup>,  
 Masahide Ishikawa<sup>1,2</sup>, Masakazu Iwasaki<sup>1,2</sup>, Yuji Hatada<sup>1,2</sup>  
 (1 Grad. Sch. Eng., Saitama Inst. Technol., 2 Fac. Eng., Saitama Inst. Technol.)
- 14:18 3Op05 **Investigating factors influencing Pulcherrimic acid production by the yeast *Metschnikowia***  
***pulcherrima* strain AH550**  
 .....○Ayuki Hamaguchi, Siqi Shang, Hisataka Taguchi, Yu Sasano (Grad. Sch. Eng., Sojo Univ.)
- 14:30 Break
- 14:42 3Op06 Analysis of the structure and biosynthetic pathway of a new alaremycin derivative produced by  
*Streptomyces* sp. A012304  
 .....○Mio Okui, Yuki Noto, Noritaka Iwai, Masaaki Wachi (Sch. Life Sci. Technol, Tokyo Tech)
- 14:54 3Op07 Effects of heat treatment on molecular structure and immunostimulatory activity of polyglutamic acid  
 .....○Akari Mizushima<sup>1</sup>, Kazuki Kobayashi<sup>2</sup>, Masao Inoue<sup>2,3</sup>, Ryoji Masui<sup>1</sup>,  
 Akira Ogita<sup>1,4</sup>, Yoshihiro Yamaguchi<sup>1</sup>, Ken-ichi Fujita<sup>1</sup>  
 (1 Grad. Sch. Sci., Osaka Metro. Univ., 2 Coll. Life Sci., Ritsumeikan Univ.,  
<sup>3</sup>R-GIRO., Ritsumeikan Univ., 4 Res. Center. Urban Health Sports, Osaka Metro. Univ.)
- 15:06 3Op08 The role of persimmon tannin in growth and metabolism of yeast under ethanol stress  
 .....○Ilhamzah<sup>1</sup>, Yoshihiro Yamaguchi<sup>1</sup>, Akira Ogita<sup>1,2</sup>, Ken-ichi Fujita<sup>1</sup>  
 (1 Grad. Sch. Sci., Osaka Metro. Univ., 2 Res. Center. Urban Health Sports, Osaka Metro. Univ.)
- 15:18 3Op09 Relationship between mitochondrial fusion and fission, and tubulin in *Saccharomyces cerevisiae*  
 .....○Yuni Yamase<sup>1</sup>, Akira Ogita<sup>2,3</sup>, Kenichi Fujita<sup>2</sup>, Wakae Murata<sup>1,2</sup>  
 (1 Yonago Natl. Coll. Technol., 2 Grad. Sch. Sci., Osaka Metro. Univ.,  
<sup>3</sup> Res. Center. Urban Health Sports, Osaka Metro. Univ.)
- 15:30 3Op10 Extension of chronological lifespan and expression of aging-related genes by immature pear extract against  
*Saccharomyces cerevisiae*  
 .....○Wakae Murata<sup>1,2</sup>, Akira Ogita<sup>2,3</sup>, Ken-ichi Fujita<sup>2</sup>  
 (1 Yonago Natl. Coll. Technol., 2 Grad. Sch. Sci., Osaka Metro. Univ.,  
<sup>3</sup> Res. Center. Urban Health Sports, Osaka Metro. Univ.)
- 15:42 Break
- 15:54 3Op11 Optimized methods of chemo-enzymatic Nylon hydrolysis for chemical recycling  
 .....○Yuki Shiraishi<sup>1</sup>, Dai-ichiro Kato<sup>1</sup>, Yoko Furuno<sup>1</sup>, Risa Yokoyama<sup>1</sup>,  
 Yuichiro Himeda<sup>2</sup>, Seiji Negoro<sup>3</sup>  
 (1 Grad. Sch. Sci. Eng., Kagoshima Univ., 2 AIST, 3 Grad. Sch. Eng., Univ. Hyogo)
- 16:06 3Op12 Chemical degradation behavior of iNylon, a promising next-generation nylon  
 .....○Maina Yonemura<sup>1</sup>, Daiichro Kato<sup>1</sup>, Risa Yokoyama<sup>1</sup>, Toshiaki Taniike<sup>2</sup>, Masayuki Yamaguchi<sup>2</sup>,  
 Kazuya Yamaguchi<sup>3</sup>, Yingjun An<sup>4</sup>, Atsushi Takahara<sup>4</sup>, Masayuki Kojima<sup>5</sup>,  
 Hiroyuki Shimanaka<sup>5</sup>, Tatsuo Kaneko<sup>6</sup>, Seiji Negoro<sup>7</sup>  
 (1 Kagoshima Univ., 2 JAIST, 3 Grad. Sch. Eng., Univ. Tokyo,  
<sup>4</sup> Kyushu Univ, Research Center for Negative Emission Technologies,  
<sup>5</sup> Dainichiseika ColorChem mfg., 6 Jiangnan Univ., 7 Grad. Sch. Eng., Univ. Hyogo)
- 16:18 3Op13 Studies on isolation and characteristics of novel bacteria that promote degradation of poly(glycolic acid)  
 .....○Takuma Kobayashi<sup>1,2</sup>, Toshiaki Nakajima-Kambe<sup>1</sup>  
 (1 Grad. Sch. Sci. Technol., Univ. Tsukuba, 2 Kureha corp.)

**Luncheon Seminars (11:30–12:30)****Room B West Bldg. 9, W9-324****3L-B Logomix Inc.****Room C West Lecture Bldg. 1, WL1-201****3L-C Biott Co., Ltd.****Room E West Lecture Bldg. 1, WL1-401****3L-E Beckman Coulter K.K.****Room I West Bldg. 2, W2-401****3L-I Yokogawa Electric Corporation**