September 3, 2023

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

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

Award Lectures (Meritorious Service Award, Society Award, Achievement Award)

Room A IB Lecture Hall (9:00–11:35)

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-Aa01 **〈Meritorious Service Award〉**

Receiving the 17th SBJ Meritorious Service Award

..... Masaya Kawase[1], ◯Toru Nakayama[2] ([1] Dept. Biosci., Nagahama Inst. Bio-Sci. Technol., [2] Grad. Sch. Eng., Tohoku Univ.)

10:15 1A-Aa02 **〈Society Award〉** Chair: **Eiichiro Fukusaki**

Fundamental research on metabolic regulations and cellular functions of microorganisms and their application to fermentation and brewing

..... ◯Hiroshi Takagi (Inst. Res. Initiatives, NAIST)

10:45 1A-Aa03 **〈Achievement Award〉** Chair: **Hiroyuki Honda**

Basic research on development and utilization of new culture technology for the exploitation of microbial functions and resources

..... ◯Hideki Aoyagi (Inst. Life Environ. Sci., Univ. Tsukuba)

11:10 1A-Aa04 **〈Achievement Award〉**

Study on the bacterial adhesion mechanism and the creation of interfacial microbial engineering processes

..... ◯Katsutoshi Hori (Grad. Sch. Eng., Nagoya Univ.)

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

Room A IB Lecture Hall (13:00–13:20)

13:00 1A-Ap01 **〈Encouragement Award (Eda Award)〉** Chair: **Hiroyuki Kojima**

Studies on unidentified oligosaccharides in sake

..... ◯Masafumi Tokuoka (Fac. Appl. Biosci., Tokyo Univ. Agric.)

Room J Okuma Hall (13:00–13:20)

13:00 1A-Jp01 **〈Encouragement Award (Saito Award)〉** Chair: **Makoto Ashiuchi**

Development of single cell technology for rare cells and their applications

..... ◯Tomoko Yoshino (Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)

Room L 121 (Engineering Building #1) (13:00–13:20)

13:00 1A-Lp01 〈**Encouragement Award (Terui Award)**〉 Chair: **Masamichi Kamihira**

Bioengineering study of electricity generation mechanisms in microbial fuel cells and their applications in organic waste treatment

····· ◯Kengo Inoue (Fac. Agric., Miyazaki Univ.)

Symposium

Room E ES Hall (13:30–15:30)

Digital Transformation of Bio-science Research (Bio-DX)

13:30 Opening Remarks

·····Yasushi Okada

Chair: **Koichi Takahashi**

13:35 1S-Ep01 Introductionto JST CREST project, "Bio-DX"

····· ◯Yasushi Okada [1,2,3] ([1] BDR, RIKEN, [2] Grad. Sch. Med., Univ. Tokyo, [3] Grad. Sch. Sci., Univ. Tokyo)

13:50 1S-Ep02 Development of Bio-DX platform for understanding and optimizing microbial metabolisms

····· ◯Jun Ishii [1,2] ([1] EGBRC, Kobe Univ.,, [2] Grad. Sch. Sci. Technol. Innov., Kobe Univ.)

Chair: **Jun Ishii**

14:15 1S-Ep03 Data-driven Darwinian medicine approach for exploring shared metabolic regulatory networks between seasonal affective disorder and hibernation

····· ◯Katsuyuki Yugi [1,2,3] ([1] IMS,RIKEN, [2] IAB, Keio Univ., [3] Grad. Sch. Sci., Univ. Tokyo)

14:40 1S-Ep04 Mathematical knowledge-free cell simulation methods using language models

····· ◯Mariko Okada (Inst. Protein Res., Osaka Univ.)

15:05 1S-Ep05 Bio-DX and beyond

····· ◯Koichi Takahashi [1,2,3] ([1] BDR, RIKEN, [2] Grad. Sch. Media and Governance, Keio Univ., [3] Grad. Sch. Frontier Biosci., Osaka Univ.)

15:25 Closing Remarks

····· Koichi Takahashi

Oral Presentations

Room A IB Lecture Hall (13:30–17:06)

【Enzymology, Enzyme】

13:30 1Ap01 Influence of the metal ions on thermostable DNA (cytosine-5)-methyltransferase M.ApeKI activity and DNA binding

····· ◯Mao Hayashi [1], Yashinari Wada [2], Akira Yamamura [1,2], Yasuhiro Iida [1,2]

([1] Grad. Sch. Eng., Kanagawa Inst. Technol., [2] Appl.Biosic., Kanagawa Inst. Technol.)

13:42 1Ap02 Chemoenzymatic Synthesis of *N*-acylethanolamine using fatty acyl-AMP ligase

····· ◯Aika Kamiya [1], Shin Suzuki [2], Kuniki Kino [1,2] ([1] Grad. Sch. Adv. Sci. Eng., Waseda Univ., [2] Res. Inst. Sci. Emg., Waseda Univ.)

13:54 1Ap03 Independent expression and activity evaluation of epimerization domains from non-ribosomal peptide synthetases

……◯Risako Nagata [1], Shin Suzuki [2], Kuniki Kino [1,2] ([1] Grad. Adv. Sci. Eng., Waseda Univ, [2] Res. Inst. Sci. Emg., Waseda Univ.)

14:06 1Ap04 Purification and characterization of 3-ketoglucose reductase from *Rhizobium* sp.

……◯Nayu Miyamoto, Riki Nakanishi, Goro Takata (Fac. Agric., Kagawa Univ.)

14:18 1Ap05 Identification of transglutaminase1 substrate preferences using cDNA display and bioinformatics analysis

……◯T.I.K. Munaweera [1], Jasmina Damnjanović [1], Maurizio Camagna [1], Kiyotaka Hitomi [2], Naoto Nemoto [3], Hideo Nakano [1]
([1] Grad. Sch. Bioagric., Sci., Nagoya Univ., [2] Grad. Sch. Pharm. Sci., Nagoya Univ., [3] Grad. Sch. Sci. Eng., Saitama Univ.)

14:30 Break

14:42 1Ap06 Reconstruction of ribosome biogenesis *in vitro*

……◯Yuishin Kosaka [1,2], Yumi Miyawaki [1], Megumi Mori [1], Shunsuke Aburaya [3], Mao Fukuyama [4,5], Mitsuyoshi Ueda [1,6], Wataru Aoki [5,6,7]
([1] Grad. Sch. Agric., Kyoto Univ., [2] Research Fellow of JSPS, Tokyo, Japan, [3] Med. Inst. Bioreg., Kyushu Univ., [4] IMRAM, Tohoku Univ., [5] JST FOREST, Tokyo, Japan, [6] Kyoto Integrated Science & Technology Bio-Analysis Center, Kyoto, Japan, [7] Grad. Sch. Eng., Osaka Univ.)

14:54 1Ap07 Two cyanobacterial response regulators participate in biofilm formation

……◯Ayumu Kobayashi [1], Masamune Nakamura [1], Masaru Tsujii [1], Kohei Makino [1], Tatsuya Nagayama [1], Kensuke Nakamura [1], Kei Nanatani [1], Kota Kera [1], Yuki Furuuchi [1], Shunsuke Kayamori [1], Tadaomi Furuta [2], Iwane Suzuki [3], Yoshihiro Hayakawa [4], Ellen Tanudjaja [1], Yasuhiro Ishimaru [1], Nobuyuki Uozumi [1]
([1] Grad. Sch. Eng., Tohoku Univ., [2] Sch. Life Sci. Technol, Tokyo Tech, [3] Grad. Sch. Life Environ. Sci., Univ. Tsukuba, [4] Fac. Eng., Aichi Inst. Technol.)

15:06 1Ap08 Evaluation of enantioselectivity of an aryl-carboxylesterase EstAC and identification of the substrate binding site

…… ◯Ryosuke Maruyama, Yuya Nakai, Yusuke Kishi, Yoshika Yamada, Katsunori Sugiyama, Yoshitaka Kumagai, Munenori Takehara
(Dept. Mater. Sci., Grad. Sch. Eng., The Univ. Shiga Pref.)

15:18 1Ap09 Heterologous expression of hyperthermostable endoglucanase from *Pyrococcus furiosus* and improvement of thermostability by glycosylation

…… ◯Hironori Semba [1], Kazuhiko Ishikawa [2,3], Hirokazu Tsuboi [1], Akio Koda [1]
([1] Gen. Res. Lab., Ozeki Corp., [2] Biomed. Res. Inst., AIST, [3] Matsutani Chemical Industry Co., Ltd.)

15:30 1Ap10 Development of the assay methods for organic solvent exposure and the analytical enzymes

……◯Takuya Okusako [1], Kenta Tastumi [2], Kazuki Yagura [2], Yoshiaki Nishiya [1]
([1] Grad. Sch. Sci. Eng., Setsunan Univ., [2] Nipro Corp.)

15:42 Break

15:54 1Ap11 Development of high-performance peptidyltransferases for application use

……◯Azusa Miyata [1], Hiroyuki Takeda [2], Shogo Nakano [1], Sohei Ito [1]
([1] Grad. Sch. Integr. Pharm. Nutr. Sci., Univ. Shizuoka, [2] Proteo Science Center, Ehime University)

16:06 1Ap12 Identification and Characterization of A Novel Trans-Anethole Oxygenase

…… ◯Ni Nyoman Purwani, Marco W Fraaije
(Department of Biochemsitry, Faculty of Science and Engineering, University of Groningen)

16:18 1Ap13 Crystal structures of highly active mutant sarcosine oxidases toward L-thioproline

…… ◯Yuqi Zhang [1,2], Yoshitaka Nakajima [1], Yuto Takeda [1,2], Kohei Sasamoto [1], Tomoki Himiyama [2], Tsutomu Nakamura [2], Yoshiaki Nishiya [1]
([1] Grad. Sch. Sci. Eng., Setsunan Univ., [2] Biomed. Res. Inst., AIST)

16:30 1Ap14 Purification of metalloenzyme: an example of the influence of Ni-NTA affinity column chromatography on EDTA-sensitive activity.

……○Yuto Takeda [1,2], Kohei Sasamoto [1,2], Tomoki Himiyama [2], Yuqi Zhang [1,2], Kunihiko Moriyoshi [3], Takashi Ohmoto [3], Koichi Uegaki [4], Tsutomu Nakamura [2], Ypshiaki Nishiya [1]

([1] Grad. Sch. Sci. Eng., Setsunan Univ., [2] Biomed. Res. Inst., AIST, [3] ORIST, [4] Fac. Agric., Kindai Univ.)

16:42 1Ap15 Functional analysis of xylanases with catalytic domains separated by CBM from *Phocaeicola plebeius* and *Segatella copri*

……○Soma Tanaka [1], Miyu Takahata [1], Hidenori Hayashi [2] ([1] Grad. Sch. Eng., Maebashi Inst. Technol., [2] Fac. Eng., Maebashi Inst. Technol.)

16:54 1Ap16 Characterization of CBM that divides the catalytic domain of xylanase 10B from the human gut bacterium *Phocaeicola plebeius*

……○Yuki Chikaraishi [1], Shogo Tsuji [1], Hidenori Hayashi [2] ([1] Grad. Sch. Eng., Maebashi Inst. Technol., [2] Fac. Eng., Maebashi Ins. Technol.)

Room B IB015 (13:30–17:06)

【Enzymology, Enzyme】

13:30 1Bp01 Functional analysis of feedback inhibition-insensitive variants of *N*-acetyl glutamate kinase found in Sake yeast mutants with ornithine overproduction

……○Masataka Ohashi [1], Shota Isogai [2], Hiroshi Takagi [2] ([1] Nara Pref. Inst. Ind. Dev., [2] Grad. Sch. Biol. Sci., NAIST)

13:42 1Bp02 Functional analysis of novel dioxygenases from *Phanerochaete chrysosporium*

……○Koki Nakamura, Hiroyuki Kato, Ryoga Tsurigami, Masashi Kato, Motoyuki Shimizu (Grad. Sch. Agric., Meijo Univ.)

13:54 1Bp03 Screening of beta-fructofuranosidase from *Zalaria* sp. Him3, fructooligosaccharides producing yeast

……○Yui Saito [1], Mayumi Maeda [2], Kenji Maehashi [2], Jun Yoshikawa [2] ([1] Grad. Sch. Appl. Biosci., Tokyo Univ. Agric., [2] Fac. Appl. Biosci., Tokyo Univ. Agric.)

14:06 1Bp04 Production of sugar syrups containing a high concentration of ethyl alpha-D-glucopyranoside by XgtA, a glucosyl transfer enzyme derived from *Xanthomonas campestris* WU-9701

……○Wei Cao [1], Haruka Nakahara [1], Kaito Tamura [1], Yoshitaka Ishii [2], Kohtaro Kirimura [1,2] ([1] Grad. Sch. Adv. Sci. Eng., Waseda Univ., [2] Waseda Res. Inst. Sci. Eng.)

14:18 1Bp05 Development of ATP production cascade using thermophilic enzymes

……○Takuma Suzuki [1], Gladwin Suryatin Alim [1], Kentaro Miyazaki [1], Hiroya Tomita [1,2], Kohsuke Honda [1,2]

([1] ICBiotech, Osaka Univ., [2] OTRI, Osaka Univ.)

14:30 Break

14:42 1Bp06 Elucidating the enzymatic properties of a novel polyamide4 hydrolase from marine bacterium

……○Yusuke Saito [1], Masayoshi Honda [3], Yoko Furuno [4], Dai-ichiro Kato [4], Hideki Abe [5], Miwa Yamada [2] ([1] Grad. Sch. Agric., Iwate Univ., [2] Fac. Agric., Iwate Univ., [3] Fac. Eng., Tokyo Univ. Sci., [4] Grad. Sch. Sci., kagoshima Univ., [5] CSRS, RIKENS)

14:54 1Bp07 Characterization of novel flavoprotein monooxygenases from white-rot basidiomycete *Phanerochaete chrysosporium*

……○Rinku Hamajima [1], Mika Hayasaka [2], Hiroyuki Kato [2], Ryoga Tsurigami [2], Masashi Kato [2], Motoyuki Shimizu [2]

([1] Sch. Agric., Meijo Univ., [2] Grad. Sch. Agric., Meijo Univ.)

15:06 1Bp08 Fermentation of food residue, dashigara by *Aspergillus sydowii* and characterization of the hydrolysate
……◯Shinji Takenaka [1], Masaki Kato [1], Yasuhiro Oribe [1], Yukihiro Kimura [1], Shinichi Tanaka [2], Jyunichi Matsumoto [2], Mikiharu Doi [2]
([1] Grad. Sch. Agric., Kobe Univ., [2] Marutomo Co., Ltd.)

15:18 1Bp09 Secretion and identification of chitin-degrading proteins by the moderately thermophilic actinomycete S. *thermolineatus.*
…… ◯Kenichiro Enami [1], Jiro Arima [2], Daisuke Niki [3]
([1] Grad. Sch. Sustainability Sci., Tottori Univ., [2] Fac. Agric., Tottori Univ., [3] United Grad. Sch. Agric. Sci., Tottori Univ.)

15:30 1Bp10 Characterization of an intracellular neoagarobiose − producing beta-agarase AgaX derived from *Cellvibrio* sp. WU − 0601.
……◯Kaito Tamura [1], Saki Kaizoji [1], Yoshitaka Ishii [2], Koutaro Kirimura [1,2]
([1] Grad. Sch. Adv. Sci. Eng., Waseda Univ., [2] Waseda Univ.Res. Inst. Sci. Eng.)

15:42 Break

15:54 1Bp11 Microbial metabolism of tea catechin
……◯Minami Himeno [1], Yoshiteru Hashimoto [1,2], Takuto Kumano [1,2], Michihiko Kobayashi [1,2]
([1] Grad. Sch. Life Environ. Sci., Univ. Tsukuba, [2] MiCS, Univ. Tsukuba)

16:06 1Bp12 Screening of microorganism with novel curcumin metabolism
……◯Yoshiteru Hashimoto [1,2], Kanon Sato [1], Takuto Kumano [1,2], Michihiko Kobayashi [1,2]
([1] Grad. Sch. Life Environ. Sci., Univ. Tsukuba, [2] MiCS, Univ. Tsukuba)

16:18 1Bp13 A salt and an organic solvent-tolerant phosphite dehydrogenase for the nicotinamide cofactor regeneration under non-standard reaction condition
……◯Gamal Nasser Abdel-Hady [1,2], Takahisa Tajima [1], Takeshi Ikeda [1], Takenori Ishida [1], Hisakage Funabashi [1], Akio Kuroda [1], Ryuichi Hirota [1]
([1] Grad. Sch. Integr. Sci. Life, Hiroshima Univ., [2] Fac. Agric., Minia Univ., Egypt)

16:30 1Bp14 Construction of an enzyme cascade for semi-*de novo* synthesis of NAD^+
…… ◯Christina Aryanti Pada Soa [1], Takuma Suzuki [1], Gladwin Suryatin Alim [1], Hiroya Tomita [1,2], Kentaro Miyazaki [1], Kohsuke Honda [1,2]
([1] ICBiotech, Osaka Univ., [2] OTRI, Osaka Univ.)

16:42 1Bp15 The construction of a machine learning model to predict capable enzyme mutants
…… ◯Tatsuhiro Isozaki, Naoki Watarai, Yuuya Nakamura, Koichi Tamura (digzyme)

16:54 1Bp16 Structual and function analysis of novel L-methionine oxidase isolated from detabase
…… ◯Yui Kawamura, Shogo Nakano, Sayaka Sugiura, Sohei Ito
(Grad. Sch. Integr. Pharm. Nutr. Sci., Univ. Shizuoka)

Room C IB014 (13:30–17:06)

【Bioinformatics; Enzymology, Enzyme; Proteins】

13:30 1Cp01 Distribution of bacterial community structure on human scalp hair
…… ◯Kota Watanabe [1], Shunichi Nakayama [1], Toshimori Kadokura [1], Yukihiro Tashiro [2]
([1] Fac. Appl. Biosci., Tokyo Univ. Agric., [2] Grad. Sch. Agric., Kyushu Univ.)

13:42 1Cp02 Comparative RNA-seq analysis on nitrogen-sensitive lipid synthetic bacterium *Nitratireductor* sp. OM-1
……◯Hiroto Maeda, Yuto Hirata, Hirokazu Takahashi, Yoshiko Okamura
(Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)

13:54 1Cp03 Single-cell innate fluorescence signature predicts cellular lipid productivity of oleaginous yeasts

····· ◯Shiomi Yawata [1], Tomohiro Hirayama [2], Tatsuro Serita [4], Haruka Kazama [5], Koji Mori [4], Hiroaki Takaku [5], Nobuhiko Nomura [3,6], Yutaka Yawata [3,6]

([1] Grad. Sch. Life Earth Sci., [2] Grad. Sch. Life Environ. Sci., [3] Univ. Tsukuba Life Environ., [4] NBRC, [5] Fac. Appl. Life Sci., Niigata Univ. Pharm. Appl. Life Sci., [6] Univ. Tsukuba MiCS)

14:06 1Cp04 Development of a fast feature extraction method for SARS-CoV-2 spike sequences using amino acid physical properties

····· ◯Hiroya Oka, Shogo Yoshimoto, Katsutoshi Hori (Grad. Sch. Eng., Nagoya Univ.)

14:18 1Cp05 Estimation and transformation of substrate specificity determining residues of metabolic enzymes using machine learning

····· ◯Seiya Mori, Teppei Niide, Yoshihiro Toya, Hiroshi Shimizu (Grad. Sch. IST, Osaka Univ.)

14:30 Break

14:42 1Cp06 Design and functional evaluation of multifunctional proteins for selective aggregation of metal microparticles

····· ◯Sayaka Imamura, Kazunori Nakashima, Shunpei Sugahara, Yusuke Ishiwata, Chikara Takano, Satoru Kawasaki

(Grad. Sch. Eng., Hokkaido Univ.)

14:54 1Cp07 Development of asbestos-binding protein using antifreeze protein as molecular scaffold

····· ◯Kyoka Ichikawa, Takenori Ishida, Takeshi Ikeda, Hisakage Funabashi, Ryuichi Hirota, Akio Kuroda

(Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)

15:06 1Cp08 Production of recombinant proteins using soy pulps as medium substrates

····· ◯Sota Yamaguchi [1], Kosuke Koyama [1], Takashi Ohshiro [2,3], Hirokazu Suzuki [2,3]

([1] Dept. Eng., Grad. Sch. Sust. Sci., Tottori Univ., [2] Fac. Eng., Tottori Univ., [3] GSC, Tottori Univ.)

15:18 1Cp09 Machine learning-based enzyme function classifier enables discovery of novel PETases

····· ◯Ryota Mizushima [1,2], Naoya Suzuki [2], Akihiro Hemmi [2], Kouki Shimada [1], Kotaro Kamiya [1], Kosuke Fujishima [2]

([1] SyntheticGestalt KK, [2] Tokyo Tech)

15:30 1Cp10 Elucidation of the biochemical properties of the carboxysome shell protein CcmO

····· ◯Okubo Eiichiro [1], Sugiyama Yuka [1], Ohata Masaya [1], Nakamura Ryutaro [1], Matsumura Hirotoshi [1], Noguchi Keiichi [2], Yohda Masafaumi [2], Dohmae Naoshi [3], Odaka Masafumi [1]

([1] Grad. Sch. Eng., Sci., Akita Univ., [2] Grad. Sch. Eng., Tokyo Univ. Agric. Technol., [3] CSRS, RIKENS)

15:42 Break

15:54 1Cp11 Contribution of N-terminal positively charged residues to the self-assembly of hydrophobin RolA from *Aspergillus oryzae*

····· ◯Natsuki Abe [1], Nao Takahashi [1], Yuki Terauchi [2], Takumi Tanaka [3], Akira Yoshimi [4], Hiroshi Yabu [5,6], Keietsu Abe [1]

([1] Grad. Sch. Agric. Sci., Tohoku Univ., [2] RCTMR, Yamaguchi Univ., [3] Grad. Sch. Eng., Osaka Univ., [4] Grad. Sch. Glob. Environ. Stud., Kyoto Univ., [5] WPI-AIMR, Tohoku Univ., [6] IMRAM, Tohoku Univ.)

16:06 1Cp12 Molecular mechanism of the self-assembly of hydrophobin RolA from *Aspergillus oryzae*

····· ◯Nao Takahashi [1], Yuki Terauchi [2], Takumi Tanaka [3], Akira Yoshimi [4], Hiroshi Yabu [5,6], Keietsu Abe [1]

([1] Grad. Sch. Agric. Sci., Tohoku Univ., [2] RCTMR, Yamaguchi Univ., [3] Grad. Sch. Eng., Osaka Univ., [4] Grad. Sch. Agric., Kyoto Univ., [5] WPI-AIMR, Tohoku Univ., [6] IMRAM, Tohoku Univ.)

16:18 1Cp13 Single-molecule toughness analysis of the trimeric adhesive protein AtaA using atomic force microscopy

····· ◯Amane Kato, Jun Sasahara, Shogo Yoshimoto, Katsutoshi Hori (Grad. Sch. Eng., Nagoya Univ.)

16:30 1Cp14 **Alkyl chain length affects the dynamics of lipid-modified proteins on lipid bilayers**

····· ◯Kazuki Uchida [1], Rie Wakabayashi [1], Masahiro Goto [1,2], Naofumi Shimokawa [3], Masahiro Takagi [3], Noriho Kamiya [1,2]

([1] Grad. Sch. Eng., Kyushu Univ., [2] CFC, Kyushu Univ., [3] Sch. Mater. Sci., JAIST)

16:42 1Cp15 Verification of stability of multiple chaperonin subunits from thermoachidophilic archaeon
……◯Kohki Taguchi [1], Keita Uozumi [1], Soichiro Ikuta [1,2], Shinsuke Fujiwara [1,2]
([1] Grad. Sch. Sci. Technol., Kwansei Gakuin Univ.,
[2] Sch. Biological. Environmental. Sci., Kwansei Gakuin Univ.)

16:54 1Cp16 Artificial protein fiber formation based on site-specific terminal cross-linkage
……◯Ayasa Nagatani [1], Kosuke Minamihata [1], Masahito Ishikawa [3], Shogo Yoshimoto [4], Katsutoshi Hori [4], Noriho Kamiya [1,2]
([1] Grad. Sch. Eng., Kyushu Univ., [2] CFC, Kyushu Univ., [3] Dept. Biosci., Nagahama Inst. Bio-Sci. Technol., [4] Grad. Sch. Eng., Nagoya Univ.)

Room D IB013 (13:30–17:06)

【Cell and Tissue Engineering; Biomedical Engineering】

13:30 1Dp01 Application of hair follicle organoids in drug screening
……◯Tatsuto Kageyama [1,2], Junji Fukuda [1,2] ([1] Kanagawa Inst. Ind. Sci. Technol. (KISTEC), [2] Grad. Sch. Eng., Yokohama Natl. Univ.)

13:42 1Dp02 Preparation of fiber-shaped capillary vessel model by using cell self-aggregation technique
……◯Shingo Hashimoto [1], Akihiko Sugiyama [2], Yoshihiro Kimata [1], Ryosuke Iwai [3]
([1] Grad. Sch. Med. Dent. Pharm, Sci., Okayama Univ., [2] Dept. Veterinary Med., Okayama Univ. Sci., [3] Inst. Front. Sci. Tech., Okayama Univ. Sci.)

13:54 1Dp03 Construction of microvascular tissue by pressure-driven microphysiological system
……◯Shinji Sugiura, Kazumi Shin (CMBRI, AIST)

14:06 1Dp04 Hypoxia stimulated culture of human dermal papilla cells for hair regenerative medicine
……◯Kotone Matsumoto [1], Tatsuto Kageyama [1,2,3], Jieun Seo [1,2], Junji Fukuda [1,2]
([1] Grad. Sch. Eng., Yokohama Natl. Univ., [2] Kanagawa Institute of Industrial Science and Technology, [3] PRESTO, JST)

14:18 1Dp05 Development of non-destructive and rapid deviation detection techniques in three-dimensional cell culture
……◯Kenjiro Tanaka [1], Miya Kawasaki [1], Keigo Nakano [1], Saki Hayashi [1], Miki Nagai [1], Yoko Igarashi [2], Hiroshi Suganuma [2], Ryuji Kato [1,3]
([1] Grad. Sch. Pharm. Sci., Nagoya Univ., [2] Sumitomo Electric Industries, Ltd., [3] Institue of Nano-Life-Systems, Nagoya Univ.)

14:30 Break

14:42 1Dp06 A study for improvement of enzyme activity in the liquid liver
……◯Yui Kishitani, Nobuhiko Kojima (Grad. Sch. Nanobiosci., Yokohama City Univ.)

14:54 1Dp07 Development of phospholipid polymer-modified alginate gels for bioartificial pancreas
……◯Ryo Futatsubashi, Masahiro Kaneko, Akira Ito (Grad. Sch. Eng., Nagoya Univ.)

15:06 1Dp08 Development of Novel Autologous Tissue Engineered Artificial Heart Valves by *in vivo* Tissue Engineering Process
……◯Yasushi Sato, Takeshi Terazawa, Yusuke Inoue, Yoshiaki Takewa
(Adv. Med. Eng. Center Asahikawa Medical Univ.)

15:18 1Dp09 Development of contrast agent-loaded cell aggregated fibers by using cell self-aggregation technique
····· ○Lupeng Teng [1,2], Soichiro Fukushima [3,4], Makoto Koizumi [5], Minami Hasegawa-Ogawa [4], James Hirotaka Okano [4], Takao Ohki [3], Ryosuke Iwai [2]
([1] Grad. Sci. Tech., Okayama Univ. Sci., [2] Inst. Front. Sci. Tech., Okayama Univ. Sci., [3] Div. Vasc. Surg., Dept. Surg., The Jikei Univ. Med., [4] Div. Regen. Med., Res. Ctr. Med. Sci., The Jikei Univ. Med., [5] Lab. Anim. Fac., Res. Ctr. Med. Sci., The Jikei Univ. Med.)

15:30 1Dp10 Biofabrication of human liver microtissues using genetically modified hepatoma cells
····· ○Silas Habimana, Hiroyuki Kitano, Yoshinori Kawabe, Masamichi Kamihira (Dept. Chem. Eng., Grad. Sch. Eng., Kyushu Univ.)

15:42 Break

15:54 1Dp11 Preparation of the gold nanoparticles-immobilized wool keratin film
····· Hideki Mori, Kento Yamada, ○Masayuki Hara (Grad. Sch. Sci., Osaka Metro. Univ.)

16:06 1Dp12 Analysis of growth characteristics of human glioma cells on radiation-crosslinked poly (vinyl alcohol) gels
····· ○Yota Noma, Hideki Mori, Masayuki Hara (Grad. Sch. Sci., Osaka Metro. Univ.)

16:18 1Dp13 Development of functional micro hydrogel with cell selective ability
····· ○Noe Inomoto [1], Masahiro Tominaga [3], Yoichiro Ito [3], Jun Ishii [3], Akihiko Kondo [3], Noriho Kamiya [1,2]
([1] Grad. Sch. Eng., Kyushu Univ., [2] CFC, Kyushu Univ., [3] EGBRC, Kobe Univ.,)

16:30 1Dp14 Response to cell adhesion peptide by glycan profire
····· ○Akiyo Fujimoto [1], Kenjiro Tanaka [1], Ryuji Kato [1,2] ([1] Grad. Sch. Pharm. Sci., Nagoya Univ., [2] Institute of Nano-Life-Systems, Nagoya Univ.)

16:42 1Dp15 Physicochemical properties of immobilized peptide ambience (iPAM) affect osteoblast adhesion
····· ○Ayato Sugiyama [1], Tomohiro Yokoi [1], Kei Kanie [1,2], Koichiro Uto [3], Mitsuhiro Ebara [3], Aika Oagata [4], Yuji Narita [4], Kenjiro Tanaka [1], Ryuji Kato [1,5]
([1] Grad. Sch. Pharm. Sci., Nagoya Univ., [2] Kindai Univ. Fac. Eng., [3] Nat. Inst. Mater. Sci., [4] Grad. Sch. Med., Nagoya Univ., [5] Inst. Nano-Life-Sys., Nagoya Univ.)

16:54 1Dp16 Preparation of heparin/keratin composite films and characterization of cell adhesion to them
····· ○Rinku Nakagawa, Hideki Mori, Masayuki Hara (Grad. Sch. Sci., Osaka Metro. Univ.)

Room F ES021 (13:30–17:06)

【Brewing, Brewing Technology】

13:30 1Fp01 Analysis of microbiome in soy sauce fermentation and aging process
····· ○Mizuno Yuichi [1,2], Yoshimura Takashi [3], Sawada Kazutaka [3], Tsuge Keisuke [3], Nagano Yukio [4], Yoshizaki Yumiko [5], Goto Masatoshi [6], Kobayashi Genta [6]
([1] United Grad. Sch. Agric. Sci., Kagoshima Univ., [2] Miyajima Shoyu Co.,Ltd., [3] Ind. Technol. Ctr. Saga, [4] Anal. Res. Ctr. Exp. Sci., Saga Univ., [5] Fac. Agric., Kagoshima Univ., [6] Fac. Agric., Saga Univ.)

13:42 1Fp02 Development of SNP markers to identify lineage of superior Kyokai sake yeast and the related strains
····· Yan Zhou [1], Shogo Sakurai [1,2], Xiaohong Zheng [1], Tetsuya Goshima [1], Muneyoshi Kanai [1], Hitoshi Shimoi [3], Naoto Okazaki [3], ○Takeshi Akao [1,2]
([1] NRIB, [2] Grad. Sch. Integr. Sci. Life, Hiroshima Univ., [3] Society of Brewing, Japan)

13:54 1Fp03 Transcriptomic profiles of *Aspergillus oryzae* RIB40 and RIB143 responding to humic acid.
····· ○Liyun Liu, Kanae Sakai, Takumi Tanaka, Ken-Ichi Kusumoto (Grad. Sch. Eng., Osaka Univ.)

14:06 1Fp04 Search for plant-microbe interaction factors using yeast alcohol fermentation as an indicator
……○Yukiko Nakase, Yuichi Morozumi, Yukiko Sugimoto, Daisuke Watanabe
(Grad. Sch. Biol. Sci., NAIST)

14:18 1Fp05 Analysis of Aspergillus oryzae acid phosphatases involved in nucleic acid-based umami component degradation
……○Kanae Sakai [1], Tadahiro Suzuki [2], Yuichiro Horii [3], Yutaka Wagu [4], Ken-Ichi Kusumoto [1]
([1] Grad. Sch. Eng., Osaka Univ., [2] NARO, [3] Niigata Food Res. Center, [4] Bio'c Co., Ltd.)

14:30 Break

14:42 1Fp06 Breeding of a Sake Yeast with Improved Isobutyl Acetate Productivity and Analysis of the Effects of Nitrogen Source
……○Shogo Kakoi, Takuya Asai, Takafumi Kubodera, Takahiro Akashi
(HAKUTSURU SAKE BREWING)

14:54 1Fp07 Exploring fermentation-promoting compounds using a shochu brewing model.
……○Satoshi Ebe [1], Naruyuki Maruoka [2], Hideharu Takashita [2], Hisashi Hoshida [3], Rinji Akada [3]
([1] Grad. Sch. Sci. Tech. Innov., Yamaguchi Univ., [2] Sanwa Shurui Co., Ltd, [3] Fac. Eng., Yamaguchi Univ.)

15:06 1Fp08 Functional analysis of V-ATPase in highly fermentative yeast, Bafilomycin A1 resistant strain
……○Mai Nakase, Takuya Asai, Takafumi Kubodera, Takahiro Akashi
(Hakutsuru Sake Brewing Co., Ltd.)

15:18 1Fp09 Changes in antioxidant during mash making process of sake with *kimoto*-style seed mash
…… ○Tomotsugu Noguchi, Wataru Kawahara, Taku Ishikawa, Keisuke Tobita
(Ind. Technol. Innov. Cent. Ibaraki)

15:30 1Fp10 The increased levels of reactive oxygen species resulting from heat stress in the yeast strain DBY746 are related to mitochondria.
…… ○Takeo Miki, Ayako Sano (Integr. Grad. Sch. Med. Eng. Agric. Sci, Univ. Yamanashi)

15:42 Break

15:54 1Fp11 Improved effect of low temperature treatment on inhibition of yeast proteasome activity under severe ethanol stress
……Vo Thi Anh Nguyet, Ryoko Ando, Noboru Furutani, ○Shingo Izawa
(Grad. Sch. Sci. Technol., Kyoto Inst. Technol.)

16:06 1Fp12 Metabolic regulation of ethanol utilization during acetic acid fermentation in *Acetobacter pasteurianus*, an acetic acid bacteria used for vinegar brewing
……○Miyu Sato [1], Hisatoshi Matuo [1], Ayano Maruyama [2], Ryosuke Unno [1], Toshihiro Suzuki [1,2], Morio Ishikawa [1,2]
([1] Grad. Sch. Appl. Biosci., Tokyo Univ. Agric., [2] Fac. Appl. Biosci., Tokyo Univ. Agric.)

16:18 1Fp13 Study on Alpha-EG and Purines in *Ginjo* Brewing
……○Yusaku Ishibashi [1], Hiroyuki Takayama [2], Shusaku Tada [2], Kenji Ozeki [1]
([1] Genome Biotechnol. Lab., Kanazawa Inst. Technol., [2] Amano Enzyme Inc.)

16:30 1Fp14 Breeding of high-ethyl caproate producing yeast from Gunma G101 yeast by ion-beam irradiation
……○Takashi Watanabe [1], Katsuya Satoh [2], Yutaka Oono [2], Tajima So [1]
([1] Gunma Ind. Technol. Center, [2] QST Takasaki)

16:42 1Fp15 Elucidation of the higher fermentation ability of a non-kyokai sake yeast
……○Kotaro Mori [1,2], Taisuke Seike [1], Tasuku Yamada [2], Nobuchika Tanaka [2], Fumio Matsuda [1]
([1] Grad. Sch. IST, Osaka Univ., [2] Kiku-Masamune Sake Brewing Co., Ltd.)

16:54 1Fp16 Functional analysis of citrate exporter homologs in the white koji fungus, *Aspergillus luchuensis* mut. *kawachii*
……Atsushi Nishitani [1], Kentaro Hiramatsu [2], Chihiro Kadooka [3], Kazutaka Sawada [4], Kayu Okutsu [2], Yumiko Yoshizaki [1,2], Kazunori Takamine [1,2], Masatoshi Goto [5], Hisanori Tamaki [1,2], ○Taiki Futagami [1,2]
([1] United Grad. Sch. Agric. Sci., Kagoshima Univ., [2] Fac. Agric., Kagoshima Univ., [3] Fac. Biotechnol. Life Sci., Sojo Univ., [4] Ind. Tech. Cent. Saga, [5] Fac. Agric., Saga Univ.)

Room G ES022 (13:30–16:54)

【Nucleic Acid Engineering; Peptide Engineering; Lipid Engineering; Glycoengineering; Taxonomy, Phylogenetics】

13:30 1Gp01 Development of a multiplex PCR method for the high-throughput construction of comprehensive gene libraries
……○Wataru Uchiyama[1], Kenji Sugase[1], Wataru Aoki[2,3,4]
([1] Grad. Sch. Agric., Kyoto Univ., [2] Kyoto Integrated Science & Technology Bio-Analysis Center, [3] PRESTO, JST, [4] Grad. Sch. Eng., Osaka Univ.)

13:42 1Gp02 An approach for the cell-free synthesis of hydrophobic *de novo* peptide nanopores
……○Shoko Fujita[1], Izuru Kawamura[2], Ryuji Kawano[1] ([1] Grad. Sch. Eng., Tokyo Univ. Agric. Technol., [2] Grad. Sch. Eng., Yokohama Natl. Univ.)

13:54 1Gp03 3D structure construction of cyclic peptide using Deep learning
……○Kowit Hengphasatporn, Ryuhei Harada, Yasuteru Shigeta (CCC, Univ. Tsukuba)

14:06 1Gp04 Enhanced abiotic stress tolerance in *Escherichia coli* by expression of basic LEA peptide
……○Shinya Ikeno[1], Hayato Nakamura[1], Soma Kishikawa[1], Khaled Metwally[2]
([1] Grad. Sch. Life Sci. Syst. Eng., Kyushu Inst. Technol., [2] Fac. Agric., AinShams Univ.)

14:18 1Gp05 Evaluation of inflammatory response regarding extracellular vesicles "migrasome" using a peptide interface.
……○Shogo Saito, Masayoshi Tanaka, Mina Okochi (Sch. Mater. Chem. Technol., Tokyo Tech)

14:30 Break

14:42 1Gp06 Breeding of a strain of lactic acid bacterium with high productivity of membrane vesicles and culture conditions for the membrane vesicles-producing lactic acid bacterium
……○Asami Maeda[1], Atsushi Kurata[2], Kenichi Kawano[3], Koichi Uegaki[2]
([1] Grad. Sch. Agric., Kindai Univ., [2] Fac. Agric., Kindai Univ., [3] Grad. Sch. Pharm. Sci., Kyoto Univ.)

14:54 1Gp07 Application to novel glycosylation for antibody production by addition of Fucose like sugars to CHL cells
……○Azumi Mitsuishi[1], Ryo Misaki[2], Hiroki Takechi[2], Hiroyuki Kajiura[2], Kazuhito Fujiyama[2]
([1] Grad. Sch. Eng., Osaka Univ., [2] ICBiotech, Osaka Univ.)

15:06 1Gp08 Evaluation of HBV infection efficiency to desialylated human hepatocytes
……○Kai Harayama[1], Ryo Misaki[2], Daijiro Nagano[2], Hiroyuki Kajiura[2], Kazuhito Fujiyama[2]
([1] Grad. Sch. Eng., Osaka Univ., [2] ICBiotech, Osaka Univ.)

15:18 1Gp09 Production of the herbal plant-derived apigenin diglycoside in *Escherichia coli*
……○Miki Kobayashi[1], Takeshi Ishimizu[2], Takao Ohashi[1] ([1] Grad. Sch. Sci. Eng., Setsunan Univ., [2] Coll. Life Sci., Ritsumeikan Univ.)

15:30 1Gp10 Analysis of Chitinase from A Land Crab
……○Yuma Nagakura, Katuhide Miyake (Fac. Sci. Tech, Meijo Univ.)

15:42 Break

15:54 1Gp11 Comparative genomic analysis reveals the classification of the "true" *Pseudomonas fluorescens* and *Pseudomonas putida*
……○Tomohiro Morohoshi[1], Naoya Yaguchi[1], Nobutaka Someya[2]
([1] Grad. Sch. Reg. Dev. Creat., Utsunomiya Univ., [2] NARO)

16:06 1Gp12 Chemolithoautotrophy and ammonia gas tolerant mechanism of ammonia gas tolerant bacterium, *Paenibacillus lentus* NH33
……Keiji Kiyoshi, ○Naoto Yoshida (Fac. Agric., Univ. Miyazaki)

16:18 1Gp13 Microbial community analysis of the biological iron-oxidation system for acid mine drainage treatment under moderate acidic conditions.
……○Tadayoshi Kanao[1], Yui Yatsuka[1], Kazuo Kamimura[1], Fumio Akahori[2], Hiromasa Inaya[2], Shoichi Kumon[3], Kimitaka Sato[3]
([1] Grad. Sch. Environ. Life Sci., Okayama Univ., [2] Unekura mining Ltd., [3] DOWA HDs.)

16:30 1Gp14 Isolation and cultivation of salt-tolerant acidophilic iron-oxidizing bacteria
····· ◯Yui Yatsuka [1], Yuka Nitta [2], Michiko Nemoto [1], Takashi Tamura [1], Tadayoshi Kanao [1]
([1] Grad. Sch. Environ. Life Sci., Okayama Univ., [2] Fac. Agric., Okayama Univ.)

16:42 1Gp15 Effects of yamabushitake extract on the biofilm formation of *Streptococcus mutans*
····· ◯Hiroyuki Azakami [1,2,3], Ayesha Siddiqa [2], Momoko Hamaji [3], Mayu Morikawa [4], Takayuki Ishimaru [5]
([1] Res. Center Thermotolerant Micorob. Resour., Yamaguchi Univ.,
[2] United Grad. Sch. Agric. Sci., Tottori Univ., [3] Grad. Sch. Sci. Tech. Innov., Yamaguchi Univ.,
[4] Fac. Agric., Yamaguchi Univ., [5] Dept. Food Nutr., Ube Frontier Univ.)

Room H ES024 (13:30–17:06)

【Fermentation Physiology, Fermentation Technology; Metabolic Engineering; Omics Technology】

13:30 1Hp01 Regulation of glutamine metabolism by dipeptide Ala-Gln in *Escherichia coli*
····· ◯Mizuki Akimoto, Noritaka Iwai, Masaaki Wachi (Sch. Life Sci. Technol, Tokyo Tech)

13:42 1Hp02 Introduction of PET degradation pathway into *Bacillus subtilis* and evaluation of its degradation activity
····· Shiho Fujii [1], ◯Motohiko Tashiro [1], Junko Yamamoto [2], Shunsuke Inomata [2], Wataru Hiratani [1], Mika Uehara [1], Sumitaka Hase [1], Manato Akiyama [1], Mitsuhiro Itaya [2], Kenji Miyamoto [1], Masakazu Kataoka [2], Yasubumi Sakakibara [1]
([1] Keio Univ., [2] Eng. Fac. Eng., Shinshu Univ.)

13:54 1Hp03 Constructing a strain library that takes a variety of glycolytic flux ratio by ribosome-binding sequences engineering in Escherichia coli
····· ◯Tomoki Shimotani [1], Shogo Sawada [2], Yoshihiro Toya [1], Hiroshi Shimizu [1]
([1] Grad. Sch. Eng., Osaka Univ., [2] AGC Inc.)

14:06 1Hp04 Gene disruption of the central metabolic pathway that enhances sugar consumption and secondary metabolite production in *Streptomyces lividans*
····· ◯Kentaro Nakazawa [1], Syogo Yamamoto [2], Yota Tsuge [1,3]
([1] Grad. Sch. Nat. Sci. Technol., Kanazawa Univ., [2] NAGASE & CO., LTD, [3] InFiniti, Kanazawa Univ)

14:18 1Hp05 Host metabolism reducing fitness cost imposed by plasmid carriage
····· ◯Masaaki Hidaka [1], Chiho Suzuki-Minakuchi [1,2], Kenshi Suzuki [1,2], Kazunori Okada [1], Nobuyuki Okahashi [3], Hideaki Nojiri [1,2]
([1] Grad. Sch. Agric. Life Sci., Univ. Tokyo, [2] CRIIM, Univ. Tokyo, [3] Grad. Sch. IST, Osaka Univ.)

14:30 Break

14:42 1Hp06 Effect of glycolaldehyde on physiological states of cyanobacteria
····· ◯Tatsumi Imada, Yoshihiro Toya, Hiroshi Shimizu (Grad. Sch. IST, Osaka Univ.)

14:54 1Hp07 Effect of glycerol on recombinant protein production in *Escherichia coli*
····· ◯Hajime Saito [1], Yoshihiro Ojima [1], Shintaro Miyuki [2], Koichi Fukunaga [2], Terumichi Tsuboi [2], Masayuki Azuma [1]
([1] Grad. Sch. Eng., Osaka Metro. Univ., [2] Sakamoto Yakuhin Kogyo Co., Ltd.)

15:06 1Hp08 Engineering the yeast *Pichia pastoris* for high-level production of aromatic compounds and understanding the metabolic mechanism
····· ◯Ryota Kumokita [1], Takahiro Bamba [2], Akihiko Kondo [1,2,3], Tomohisa Hasunuma [1,2,3]
([1] Grad. Sch. Sci. Technol. Innov., Kobe Univ., [2] EGBRC, Kobe Univ., [3] CSRS, RIKENS)

15:18 1Hp09 Development of a high-throughput 13C metabolic flux analysis method based on a small-scale culture system
····· ◯Sota Nakaya, Taisuke Seike, Nobuyuki Okahashi, Fumio Matsuda (Grad. Sch. IST, Osaka Univ.)

15:30 1Hp10 Comparative metabolomic analysis of yeast for carbon source diversification

····· ◯Ayumu Kamiyama [1], Taisuke Seike [1,2], Fumio Matsuda [1,2,3]
([1] Grad. Sch. IST, Osaka Univ., [2] OTRI, Osaka Univ.,
[3] Omics. Innov. Res. Lab, Osaka Univ. Shimadzu Corp)

15:42 Break

15:54 1Hp11 Development of a quantitative analysis of central carbon metabolic flux for regulation of differentiation and function in mammalian cells

····· ◯Takeo Taniguchi, Nobuyuki Okahashi, Fumio Matsuda (Grad. Sch. IST, Osaka Univ.)

16:06 1Hp12 The metabolic analysis of CHL-YN cell through the analysis of organic / inorganic components in culture supernatant

····· ◯Hirotaka Kuroda [1,2,3], Kazuya Sorada [1], Akari Noma [1], Noriko Yamano-Adachi [1], Junko Iida [2,3], Takeshi Omasa [1]
([1] Grad. Sch. Eng., Osaka Univ., [2] Shimadzu Corp.,
[3] Osaka Univ. Shimadzu Omics Innovation Research Laboratories, Osaka Univ.)

16:18 1Hp13 Investigation for identification of key medium components of CHL-YN cells

····· ◯Kazuya Sorada [1], Hirotaka Kuroda [1,2,3], Akari Noma [1], Noriko Yamano-Adachi [1], Takeshi Omasa [1]
([1] Grad. Sch. Eng., Osaka Univ., [2] Shimadzu Corp.,
[3] Osaka Univ. Shimadzu Omics Innovation Research Laboratories, Osaka Univ.)

16:30 1Hp14 Profiling of components in sour beer and analysis of correlation with their flavor characteristics

····· ◯Kyoya Onishi [1], Eiichiro Fukusaki [1,2,3], Masahiro Furuno [1]
([1] Grad. Sch. Eng., Osaka Univ., [2] Osaka University Shimadzu Omics Innovation Research Laboratories,
[3] OTRI, Osaka Univ.)

16:42 1Hp15 Metabolomics based investigation of the differences between traditional soy sauce and modern soy sauce

····· ◯Yoshika Maekawa [1], Eiichiro Fukusaki [1,3,4], Miho Imamura [2], Miki Nakamura [2]
([1] Grad. Sch. Eng., Osaka Univ., [2] Kikkoman Corp., [3] Industrial Biotechnology Initiative Division, Institute for Open and Transdisciplinary Research Initiatives, Osaka Univ.,
[4] Osaka University Shimadzu Omics Innovation Research Laboratories)

16:54 1Hp16 Improvement of valine and isobutanol production in sake yeast by Ala31Thr substitution in the regulatory subunit of acetohydroxy acid synthase

····· ◯Shota Isogai [1], Akira Nishimura [1], Naoyuki Murakami [2], Natsuki Hotta [2], Atsushi Kotaka [2], Yoichi Toyokawa [1], Hiroki Ishida [2], Hiroshi Takagi [1]
([1] Grad. Sch. Biol. Sci., NAIST, [2] Res. Inst., Gekkeikan Sake Co., Ltd.)

Room I ES025 (13:30–17:06)

【Metabolic Engineering; Fermentation Physiology, Fermentation Technology】

13:30 1Ip01 Development of a versatile host hyper-producing heterologous natural products in *Aspergillus oryzae* by large-scale metabolic engineering based on genome editing

····· ◯Naoya Saito [1], Takuya Katayama [1,2], Atsushi Minami [3], Hideaki Oikawa [4], Jun-ichi Maruyama [1,2]
([1] Grad. Sch. Agric. Life Sci., Univ. Tokyo, [2] CRIIM, UTokyo, [3] Grad. Sch. Sci., Hokkaido Univ.,
[4] Sch. Biotechnol.Wuyi Univ.)

13:42 1Ip02 alpha-Tomatine degradation to tomatidine by food-related *Aspergillus* species belonging to the section *Nigri*

····· ◯Chun Wai Hui [1], Yuki Nakatani [1,2], Jun Ogawa [1], Shigenobu Kishino [1]
([1] Grad. Sch. Agric., Kyoto Univ., [2] Kagome Co., Ltd.)

13:54 1Ip03 Metabolic engineering of the organic solvent tolerant microorganism, Kocuria rhizophila DC2201 for producing astaxanthin

····· ○Hiroshi Toda, Tamotsu Kanai (Fac. Eng., Toyama Pref. Univ.)

14:06 1Ip04 Development of genetic engineering technology for polyketide production in *Escherichia coli*.

····· ○Itsuki Tomita [1], Takahiro Bamba [2], Akihiko Kondou [1,2,3], Tomohisa Hasunuma [1,2]
([1] Grad. Sch. Sci. Technol. Innov., Kobe Univ., [2] EGBRC, Kobe Univ.,, [3] CSRS, RIKENS)

14:18 1Ip05 Development of *cis,cis*-muconic acid high-producing strains using *Escherichia coli* as a host

·····○Natsuki Morishima [1], Takahiro Bamba [2], Tomohisa Hasunuma [1,2], Akihiko Kondo [1,2,3]
([1] Grad. Sch. Sci. Technol. Innov., Kobe Univ., [2] EGBRC, Kobe Univ., [3] CSRS, RIKENS)

14:30 Break

14:42 1Ip06 Metabolic pathway engineering for butyrolactam production in *Escherichia coli* harboring the non-oxidative glycolysis

·····○Kenta Miyoshi, Kinuka Isshiki, Teppei Niide, Yoshihiro Toya, Hiroshi Shimizu
(Grad. Sch. IST, Osaka Univ.)

14:54 1Ip07 Genetic strategy for construction of *Rhodobacter sphaeroides* overproducing 5-aminolevulinic acid without exogenous-DNA insertion

····· ○Takuma Kojima [1,2], Shinji Masuda [2] ([1] Neopharma Japan Co., Ltd.,
[2] Sch. Life Sci. Technol, Tokyo Tech)

15:06 1Ip08 Energy metabolic engineering of *Escherichia coli* for the enhancement of 1,3-butanediol production

·····○Naoya Kataoka [1,2], Tomoya Maeda [3], Masaru Wada [4], Atsushi Yokota [3], Kazunobu Matsushita [2,5],
Toshiharu Yakushi [1,2]
([1] Org. Res. Initiatives, Yamaguchi Univ., [2] RCTMR, Yamaguchi Univ., [3] Grad. Sch. Agric., Hokkaido Univ.,
[4] Fac. Agric., Setsunan Univ., [5] Fac. Agric., Yamaguchi Univ.)

15:18 1Ip09 Development of a metabolically engineered strain of isopropanol-producing *Moorella thermoacetica* for gas fermentation

·····○Takeshi Matsuo [1], Junya Kato [2], Setsu Kato [1], Kaisei Takemura [1], Tatsuya Fujii [2], Keisuke Wada [2],
Masahiro Watanabe [2], Yusuke Nakamichi [2], Yoshiteru Aoi [1], Akinori Matsushika [2], Tomotake Morita [2],
Katsuji Murakami [2], Yutaka Nakashimada [1]
([1] Grad. Sch. Integr. Sci. Life, Hiroshima Univ., [2] AIST)

15:30 1Ip10 Molecular breeding of the anaerobic bacterium *Moorella thermoacetica* to enhance the oxygen tolerance

····· ○Hayato Ishida [1], Junya Kato [2], Setsu Kato [1], Tatsuya Fujii [2], Keisuke Wada [2], Masahiro Watanabe [2],
Yusuke Nakamichi [2], Yoshiteru Aoi [1], Akinori Matsushika [2], Tomotake Morita [2], Katsuji Murakami [2],
Yutaka Nakashimada [1]
([1] Grad. Sch. Integr. Sci. Life, Hiroshima Univ., [2] AIST)

15:42 Break

15:54 1Ip11 Engineering *Cupriavidus necator* H16 to increase Polyhydroxybutyrate production from CO_2

····· ○Naoki Abekawa [1], Tomohiro Mochizukki [2], Ryota Hidese [2], Akihiko Kondo [1,2,3],
Tomohiro Hasunuma [1,2]
([1] Grad. Sch. Sci. Technol. Innov., Kobe Univ., [2] EGBRC, Kobe Univ.,, [3] CSRS, RIKENS)

16:06 1Ip12 Construction of new synthetic pathway for C4-based (4-hydroxybutyrate) biopolymers from sugar

····· ○Kai-Hee Huong, Orita Izumi, Fukui Toshiaki (Sch. Life Sci. Technol, Tokyo Tech)

16:18 1Ip13 Metabolisms of 2-hydroxybutyrate (2HB) and biosynthesis of 2HB-containing sequence-regulated polyhydroxyalkanoates (PHAs) by engineered *Ralstonia eutropha*

····· ○Shizuru Ishihara [1], Izumi Orita [1], Ken'ichiro Matsumoto [2], Toshiaki Fukui [1]
([1] Sch. Life Sci. Technol, Tokyo Tech, [2] Grad. Sch. Eng., Hokkaido Univ.)

16:30 1Ip14 Metabolic engineering of aspartate-derived amino acid biosynthetic pathway improves salt-stress tolerance in the ectoine-deficient *Halomonas elongata*

····· ○Yunheui Joo [1], Hideki Nakayama [1,2,3] ([1] Grad. Sch. Fish. Sci. Environ. Stud., Nagasaki Univ.,
[2] Inst. Sic. Technol., Nagasaki Univ., [3] Org. Marine Sci. Techonol., Nagasaki Univ.)

16:42 1Ip15 High-salinity induced overproduction of L-proline improves salt-stress tolerance of engineered ectoine-deficient *Halomonas elongata*

……◯Khanh Huynh Cong, Hideki Nakayama (Grad. Sch. Fish. Sci. Environ. Stud., Nagasaki Univ.)

16:54 1Ip16 Improved production of GABA by engineered *Halomonas elongata* GOP-Gad strain cell factory from waste biomass

……◯Ziyan Zou [1], Hideki Nakayama [1,2,3] ([1] Grad. Sch. Fish. Environ. Sci., Nagasaki Univ., [2] Inst. Sci. Technol., Nagasaki Univ., [3] Org. Marine Sci. Technol., Nagasaki Univ.)

Room J Okuma Hall (13:30–17:06)

【Genetic Engineering】

13:30 1Jp01 Exchange of endogenous and heterogeneous yeast terminators in *Pichia pastoris* to tune mRNA stability and gene expression

……◯Yoichiro Ito [1,4], Goro Terai [2], Misa Ishigami [3], Noriko Hashiba [3], Yasuyuki Nakamura [1], Takahiro Bamba [1], Ryota Kumokita [4], Tomohisa Hasunuma [1,4], Kiyoshi Asai [2], Jun Ishii [1,4], Akihiko Kondo [1,4] ([1] EGBRC, Kobe Univ.,, [2] Grad. Sch. Front. Sci., Univ. of Tokyo, [3] TRAHED, [4] Grad. Sch. Sci. Technol. Innov., Kobe Univ.)

13:42 1Jp02 Development of yeast transcriptional switches using bacteriophage RNA polymerase

……◯Tomohiko Hori [1], Masahiro Tominaga [1,2], Kousuke Kaji [1], Akihiko Kondo [1,2,3,4], Jun Ishii [1,2] ([1] Grad. Sch. Sci. Technol. Innov., Kobe Univ., [2] EGBRC, Kobe Univ.,, [3] Grad. Sch. Eng, Kobe Univ., [4] CSRS, RIKENS)

13:54 1Jp03 Designing strongly inducible yeast synthetic promoters

……◯Masahiro Tominaga [1,2], Yoichiro Ito [1,2], Akihiko Kondo [1,2,3,4], Jun Ishii [1,2] ([1] EGBRC, Kobe Univ.,, [2] Grad. Sch. Sci. Technol. Innov., Kobe Univ., [3] Grad. Sch. Eng, Kobe Univ., [4] CSRS, RIKENS)

14:06 1Jp04 Development of one-step synthetic pathway from glucose to polyesters using yeast

……◯Ryota Endo [1], Pangestu Radityo [1], Rahmasari Dianti [1], Kahar Prihardi [1], Akihiko Kondo [2], Chiaki Ogino [3] ([1] Grad. Sch. Eng, Kobe Univ., [2] Grad. Sch. Sci. Technol. Innov., Kobe Univ., [3] Fac. Eng., Kobe Univ.)

14:18 1Jp05 Release of carbon catabolite repression by deletion of the glucokinase gene in *Pseudozyma antarctica*.

……◯Mizuki Tanaka [1], Takumi Tanaka [2], Atsuhiro Miura [2], Yuna Suganuma [3], Tomomi Nabeta [3], Yasuaki Kawarasaki [3], Yohei Yamagata [1], Hiroko Kitamoto [2] ([1] Grad. Sch. Agric., Tokyo Univ. Agric. Technol., [2] NIAES, [3] Sch. Food Nutr. Sci., Univ. Shizuoka.)

14:30 Break

14:42 1Jp06 Analysis for surviving cells appeared with induction of excision of centromeric DNA from a chromosome in *Saccharomyces cerevisiae*

……◯Hiroaki Matsuzaki, Yuma Nakamura, Takushi Hatano (Fac. Life Sci. Biotechnol., Fukuyama Univ.)

14:54 1Jp07 Identification of a novel *RAS1* mutation and evaluation of the usefulness in an industrial strain of *Saccharomyces cerevisiae*

……◯Manami Yamagishi [1], Hikari Kobayashi [1], Susumu Kokubo [2], Masayuki Hayakawa [3], Hideki Yamamura [2], Youji Nakagawa [2] ([1] Integr. Grad. Sch. Med. Eng. Agric. Sci, Univ. Yamanashi, [2] Grad. Fac. Interdisc. Res., Univ. Yamanashi, [3] Yamanashi Prefectur. Univ.)

15:06 1Jp08 Identification and evaluation of the usefulness of a novel mutation that confers multistress tolerance on *Saccharomyces cerevisiae*

····· ○Chihiro Ogine [1], Momomi Tanaka [1], Susumu Kokubo [2], Masayuki Hayakawa [3], Hideki Yamamura [2], Youji Nakagawa [2]

([1] Integr. Grad. Sch. Med. Eng. Agric. Sci, Univ. Yamanashi, [2] Grad. Fac. Interdisc. Res., Univ. Yamanashi, [3] Yamanashi Prefectur. Univ.)

15:18 1Jp09 Functional analysis of PtMMF1p from *Pseudozyma tsukubaensis*, a putative transporter of mannosylerythritol lipids

·····○Azusa Saika [1], Tomotake Morita [1], Tokuma Fukuoka [1], Shuhei Yamamoto [2], Tomohiro Sugahara [2], Atsushi Sogabe [3]

([1] AIST, RISC, [2] Toyobo Co., Ltd., BRL, [3] Toyobo Co., Ltd., BOD)

15:30 1Jp10 Identification of a *cis*-element of AmyR in the promoter of the solid-state culture-specific gene *glaB* in *Aspergillus oryzae*

····· ○Yohei Aonishi, Tsukasa Onuma, Akira Watanabe, Takahiro Shintani, Katsuya Gomi (Grad. Sch. Agric. Sci., Tohoku Univ.)

15:42 Break

15:54 1Jp11 Cloning and identification of *Grifola frondosa* protease genes that express

····· Yume Nagashima [1], Ryoko Kurita [2], Mizuki Tanaka [3], ○Yasuaki Kawarasaki [1,2]

([1] Sch. Food Nutr. Sci., Univ. Shizuoka., [2] Grad. Sch. Integr. Pharm. Nutr. Sci., Univ. Shizuoka, [3] Grad. Sch. Agric., Tokyo Univ. Agric. Technol.)

16:06 1Jp12 Effects of gene knockdown of the chiton RTMP1 homolog on magnetite teeth formation

····· ○Haruka Akamine [1], Tadayoshi Kanao [1], Takashi Tamura [1], Michio Suzuki [2], David Kisailus [3], Kenji Okoshi [4], Michiko Nemoto [1]

([1] Grad. Sch. Environ. Life Sci., Okayama Univ., [2] Grad. Sch. Agric. Life Sci., Univ. Tokyo, [3] Dept. Materials Sci. Eng., [4] Fac. Sci., Toho Univ.)

16:18 1Jp13 Screening of novel inducible promoter in *Trichoderma reesei*

·····○Sakurako Ichinose, Nozomu Shibata, Fumikazu Takahashi, Shingo Koyama (Kao)

16:30 1Jp14 Investigation of various earthworm promoter activities for the construction of heterologous-gene expression systems using earthworm

·····○Shinnosuke Tada, Ryo Kojima, Maki Homma, Kiri Moriyama, Shin-ichi Akazawa (Nagaoka Natl. Coll. Technol.)

16:42 1Jp15 Identification of an isomaltose sensor involved in amylolytic enzyme production in *Aspergillus*

·····○Da Min Jeong, Jikian Tokashiki, Takahiro Shintani, Katsuya Gomi (Grad. Sch. Agric. Sci., Tohoku Univ.)

16:54 1Jp16 Multiple genome modification of *Aurantiochytrium* sp. by selection marker recycling system

····· ○Heqian Zhu, Mutsumi Nishiura, Kako Niimoto, Kenshi Watanabe, Tsunehiro Aki (Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)

Room K Okuma Lecture Room 2F (13:30–17:06)

【Biosensing and Analytical Chemistry; Sensors and Monitoring Devices; Genetic Engineering】

13:30 1Kp01 Evaluation of medaka swimming focusing on tail frequency

····· ○Hotaka Kai, Yoshiki Oka (Suzuka Natl. Coll. Technol.)

13:42 1Kp02 Analysis of the site of Survivin-HBXIP complexation formation by using the yeast two-hybrid method

·····○Yasuhiro Iida [1,2], Naoki Ban [1], Yoshiho Akiyama [2], Mao Hayashi [2]

([1] Dept. Biosci., Kanagawa Inst. Technol., [2] Grad. Sch. Eng., Kanagawa Inst. Technol.)

13:54 1Kp03 Development of gel capsule digital polymerase chain reaction (gc-dPCR)
····· ○Zheng Lin Tan, Takashi Fukuda, Masato Yasuura, Yukichi Horiguchi, Hiroki Ashiba (Sensing Syst. Res. Center, AIST)

14:06 1Kp04 Stuructre analysis of lipid A in gram-negative intestinal bacteria
·····○Nobuyuki Okahashi [1,2,3], Masahiro Ueda [4], Fumio Matsuda [1], Makoto Arita [2,3,5] ([1] Grad. Sch. IST, Osaka Univ., [2] IMS,RIKEN, [3] Grad. Sch. Pharm., Keio Univ., [4] JSR Co., [5] Grad. Sch. MLS, Yokohama City Univ.)

14:18 1Kp05 Data science for improving surface properties on hydrophilic polymers based on various analytical descriptors
·····○Masayuki Okada (Grad. Sch. Bioagric., Sci., Nagoya Univ.)

14:30 Break

14:42 1Kp06 Peptidome analysis method with *de novo* designed peptide nanopore
····· ○Misa Yamaji, Ryuji Kawano (Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)

14:54 1Kp07 Detection of inhibition of tyrosinase activity using a paper-based enzyme sensor
····· ○Naoki Nagatani [1], Kaaki Goto [1], Rina Koezuka [2] ([1] Fac. Eng., Okayama Univ. Sci., [2] Grad. Sch. Biol. Sci., NAIST)

15:06 1Kp08 Electrochemical sensing of interleukin 6 in human serum with epitope-imprinted polymer-coated electrodes
····· Hung-Yin Lin [1], ○Jing-Chen Ciou [1], Kai-Hsi Liu [1,2], Chuen-Yau Chen [1], Mei-Hwa Lee [3] ([1] National University of Kaohsiung, [2] Zuoying Branch Kaohsiung Armed Forces General Hosp, [3] I-Shou Univ)

15:18 1Kp09 Simple viability assay for lactic acid bacteria in commercial yogurt using electro-orientation
·····○Taiki Okuhara [1], Ryota Kondo [2], Minoru Suga [1], Hiroaki Shinohara [1] ([1] Grad. Sch. Sci. Eng., Univ. Toyama, [2] Fac. Eng., Univ. Toyama)

15:30 1Kp10 Development of a simple detection method for norovirus using surface enhanced Raman scattering
·····○Shuei Maehata [1], Enoch Y. Park [1,2], Indra Khoris memdi [2], Ojodomo Achadu [2] ([1] Grad. Sch. Integr. Sci. Technol., Shizuoka Univ., [2] Res. Inst. Green Sci. Technol., Shizuoka Univ.)

15:42 Break

15:54 1Kp11 Monitoring of cellular senescence by Quartz Crystal Microbalance and image analysis
····· ○Hibiki Yamaguchi (Grad. Sch. Bionics Comput. Media Sci., Tokyo Univ. Technol.)

16:06 1Kp12 Highly efficient genome editing using Type I-D CRISPR-Cas (TiD-X)
·····○Naoki Wada [1], Emi Murakami [1], Kazuya Marui [1], Yuriko Osakabe [2], Keishi Osakabe [1] ([1] Grad. Sch. Biosci. Bioind, Tokushima Univ., [2] Sch. Life Sci. Technol, Tokyo Tech)

16:18 1Kp13 Activation of tumor suppressor genes in glioblastoma with CRISPR/dCas9a immobilized magnetic peptide-imprinted chitosan nanoparticles
·····○Yu-Ling Lin [1], Ya-Chun Chang [1], Mei-Hwa Lee [2], Hung-Yin Lin [1] ([1] National University of Kaohsiung, [2] I-Shou Univ)

16:30 1Kp14 Generation of Huntington's disease model iPS cells by genome engineering technology
·····○Kurasawa Hikaru [1,2], Aizawa Yasunori [1,2] ([1] Kanagawa Institute of Industrial Science and Technology, [2] Sch. Life Sci. Technol, Tokyo Tech)

16:42 1Kp15 Role of BCR signaling pathways in antigen stimulation intensity-dependent gene expression
····· ○Wakana Ono, Nozomi Yasufuku, Yuta Ito, Naoki Kanayama (Grad. Sch. ISEHS., Okayama Univ.)

16:54 1Kp16 Mechanisms of the orphan receptor NR4A1 expression regulated by B cell antigen receptor signals
····· ○Naoki Nagato, Yuta Ito, Ryotaro Noda, Naoki Kanayama (Grad. Sch. ISEHS., Okayama Univ.)

Room L 121 (Engineering Building #1) (13:30–17:06)

【Biochemical Engineering; Bioprocess Engineering; Cell Culture Engineering】

13:30 1Lp01 Development of a biological method for the determination of odorous halogenated phenols with a high sensitivity

····· ○Saki Goto, Kaito Nakakura, Hiroki Ohnuma, Taro Urase
(Sch. Biosci. Biotechnol., Tokyo Univ. Technol.)

13:42 1Lp02 Methylation of an outer membrane protein in the toluene degrading bacterium *Acinetobacter* sp. Tol 5

····· ○Shori Inoue, Hiroya Oka, Shogo Yoshimoto, Katsutoshi Hori (Grad. Sch. Eng., Nagoya Univ.)

13:54 1Lp03 Functional analysis of outer membrane transporters of the toluene-degrading bacterium *Acinetobacter* sp. Tol 5

····· ○Sakura Mori, Shogo Yoshimoto, Hiroya Oka, Katsutoshi Hori (Grad. Sch. Eng., Nagoya Univ.)

14:06 1Lp04 Change of gene expressions in biofilm formation of *Escherichia coli* K-12 strain

····· ○Akiko Ogawa (KOSEN, Suzuka Coll.)

14:18 1Lp05 Analysis and evaluation of cellular responses of green algae cultured in a medium with dairy-processing residues as a nutrient

····· ○Misaki Yomogita [1], Tomohito Horimoto [2], Akihito Nakanishi [1,3]
([1] Grad. Sch. Bionics Comput. Media Sci., Tokyo Univ. Technol., [2] Meiji Co., Ltd.,
[3] Sch. Biosci. Biotechnol., Tokyo Univ. Technol.)

14:30 Break

14:42 1Lp06 **Functional assessment of microbial consortium in soybean rhizosphere aimed for the selection of beneficial microbes**

····· ○Masako Kifushi [1,2], Yohei Nishikawa [2,3], Masahito Hosokawa [1,2,3,4], Shinji Nakaoka [5], Toyoaki Anai [6], Haruko Takeyama [1,2,3,4]
([1] Grad. Sch. Adv. Sci. Eng., Waseda Univ., [2] CBBD-OIL, AIST-Waseda Univ.,
[3] Res. Org. Nano Life Innov., Waseda Univ.,
[4] Inst. Adv. Res. Biosyst. Dyn., Waseda Res. Inst. Sci. Eng., Waseda Univ.,
[5] Grad. Sch. Life Sci., Hokkaido Univ., [6] Grad. Sch. Agric., Kyushu Univ.)

14:54 1Lp07 Characterization of microalgae isolated from acidic hot spring: in aiming open pond culture utilization.

····· ○Sorata Okazawa [1], Tai-Yang Chiou [2], Masaaki Konishi [2] ([1] Grad. Sch. Eng., Kitami Inst. Technol.,
[2] Kitami Inst. Technol.)

15:06 1Lp08 Analysis of the morphological changes of cyanobacteria under grazing pressure (1): The case of freshwater cyanobacterium *Synechococcus elongatus* PCC 7942

····· ○Narumi Toda [1], Ryosuke Yoshida [1], Satoru Watanabe [2], Takenori Ishida [1], Takeshi Ikeda [1], Hisakage Funabashi [1], Akio Kuroda [1], Ryuichi Hirota [1]
([1] Grad. Sch. Integr. Sci. Life, Hiroshima Univ., [2] Grad. Sch. Agric., Tokyo Univ. Agric.)

15:18 1Lp09 Analysis of the morphological changes of cyanobacteria under grazing pressure (2): The case of marine cyanobacterium *Synechococcus* sp. PCC 7002

····· ○Ryosuke Yoshida [1], Satoru Watanabe [2], Takenori Ishida [1], Takeshi Ikeda [1], Hisakage Funabashi [1], Akio Kuroda [1], Ryuichi Hirota [1]
([1] Grad. Sch. Integr. Sci. Life, Hiroshima Univ., [2] Grad. Sch. Agric., Tokyo Univ. Agric.)

15:30 1Lp10 Plant growth promoting effect by cell components of photosynthetic bacteria

····· ○Shuhei Hayashi [1], Yasunari Iwamoto [1], Yuki Hirakawa [1], Koichi Mori [1], Naoki Yamada [2], Takaaki Maki [2], Shinjiro Yamamoto [1], Hitoshi Miyasaka [1]
([1] Fac. Biotechnol. Life Sci., Sojo Univ., [2] Matsumoto Institute of Microorganisms Co., Ltd.)

15:42 Break

15:54 1Lp11 Evaluation of utilizing wheat bran residue as a medium components of *S. cerevisiae*
……◯Minori Mori [1], Akihito Nakanishi [1,2] ([1] Sch. Biosci. Biotechnol., Tokyo Univ. Technol., [2] Grad. Sch. Bionics Comput. Media Sci., Tokyo Univ. Technol.)

16:06 1Lp12 Antifungal action of poly(epsilon-L-lysine)s with different chain lengths against *Saccharomyces cerevisiae*
…… ◯Amane Tanimura, Osamu Yoshida, Akihiro Matsui, Munenori Takehara (Dept. Mater. Sci., Grad. Sch. Eng., Univ. Shiga Pref.)

16:18 1Lp13 Study on carbohydrate hydrolase of myxomycete
……◯Tetsuya Kawai, Takamasa Suzuki, Shin Kanamasa (Grad. Sch. Biosci. Biotechnol., Chubu Univ.)

16:30 1Lp14 Elucidation of antibacterial effect of Pseudomonas KS-4 on Diaporthe destruens
…… ◯Yuka Kurihara, Hiroaki Kodama (Grad.Fac. Horticul., Chiba Univ.)

16:42 1Lp15 Deciphering characteristics of herbal medication for antiviral treatment through Ancient Oriental Philosophy
……◯Boryann Chen (Dept. Chem. Mater. Eng.)

16:54 1Lp16 Analysis of the characteristics of endotoxins produced by gram-negative bacteria
……◯Momoka Imamura [1], Narumi Tokunaga [1], Hideki Aoyagi [1,2] ([1] Grad. Sch. Deg. P. Agro-Bioresour. Sci. Technol., Univ. Tsukuba, [2] Inst. Life Environ. Sci., Univ. Tsukuba)

Room M 131 (Engineering Building #1) (13:30–17:06)

【Systems Biology; Biochemical Engineering; Cell Culture Engineering; Bioprocess Engineering】

13:30 1Mp01 Exhaustive investigation of genes for intracellular pH regulation in *E. coli*
…… ◯Hiroko Fukuda [1], Mikio Nakajima [2], Hirotada Mori [3], Masakazu Kataoka [1] ([1] Grad. Sch. Sci. Technol., Shinshu Univ., [2] MSL Corp., [3] Guangdong. Acad. Agri. Sci.)

13:42 1Mp02 Investigation of the expression difficulties of shark-derived immunoglobulin new antigen receptor in Chinese hamster ovary cells
…… ◯Yunchi Zhang [1], Xiaofang Lyu [1], Noriko Yamano-Adachi [1,2], Takeshi Omasa [1,2] ([1] Grad. Sch. Eng., Osaka Univ., [2] OTRI, Osaka Univ.)

13:54 1Mp03 Expression of Hspx was induced in antibody-producing CHO cells by hyperosmolality
…… ◯Mikiko Nakano [1], Ryo Misaki [2], Kajiura Hiroyuki [2], Kazuhito Fujiyama [2] ([1] Grad. Sch. Eng., Osaka Univ., [2] ICBiotech, Osaka Univ.)

14:06 1Mp04 Effect of long-term culture on antibody productivity of CHO cells
…… ◯Yuto Nagashima (Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)

14:18 1Mp05 Enhancement of antibody production in Hybridoma cells using sericin under hyperosmolarity
……◯Masatoshi Takeo [1], Masaya Fujita [1], Masashi Nakao [1], Satoshi Terada [1], Ryo Masugi [2], Naoki Umeda [2], Jun Takahashi [2] ([1] Grad. Sch. Eng. Fukui Univ., [2] SEIREN Co. Ltd.)

14:30 Break

14:42 1Mp06 Effect of temperature downshift on IgG production using fast growing CHL-YN cells
……◯Stephanie Lie, Noriko Yamano-Adachi, Takeshi Omasa (Grad. Sch. Eng., Osaka Univ.)

14:54 1Mp07 Cystine and Tyrosine feed reduces oxidative and ER stress in CHO cell
…… ◯Yusuke Shibafuji [1,2], Nobuyoshi Nagao [3], Masafumi Yohda [2] ([1] AGC Biologics, [2] Grad. Sch. Eng., Tokyo Univ. Agric. Technol., [3] AGC Inc.)

15:06 1Mp08 Localisation and function of the genetically engineered intercellular adhesion molecule cadherin in cultured mammalian cells
…… ◯Wakako Kobayashi (Ube Natl. Coll. Technol.)

15:18 1Mp09 Fabrication of scaffold-free 3D bovine muscle tissue based on fusions of multicellular spheroids
····· ○Tsugumi Arai [1], Yukito Nakagami [1], Shigemitsu Sobuku [2], Jiro Nakata [2], Kazuaki Ninomiya [3]
([1] Grad. Sch. Nat. Sci. Technol., Kanazawa Univ., [2] Teng Nakata Honten Co., Ltd.,
[3] Ints. Frontier Sci. Initiative, Kanazawa Univ.)

15:30 1Mp10 Suspension culture of bovine myoblast cells using edible microcarriers
·····○Tatasuro Sakamoto [1], Takumi Ima [1], Shigemitsu Sobuku [2], Jiro Nakata [2], Kazuaki Ninomiya [3]
([1] Grad. Sch. Nat. Sci. Technol., Kanazawa Univ., [2] Tengu Nakata Honten Co., Ltd.,
[3] Ints. Frontier Sci. Initiative, Kanazawa Univ.)

15:42 Break

15:54 1Mp11 Serum-free culture of bovine myoblast cells using conditioned medium
·····○Kyoma Takagi [1], Itsei Nakano [1], Shigemitsu Sobuku [2], Jiro Nakata [2], Kazuaki Ninomiya [3]
([1] Grad. Sch. Nat. Sci. Technol., Kanazawa Univ., [2] Tengu Nakata Honten Co., Ltd.,
[3] Ints. Frontier Sci. Initiative, Kanazawa Univ.)

16:06 1Mp12 Serum-free culture of bovine myoblast cells using food-based media
····· ○Sogo Wakabayashi [1], Kota Inoue [1], Shigemitsu Sobuku [3], Jiro Nakata [3], Kazuaki Ninomiya [2]
([1] Grad. Sch. Nat. Sci. Technol., Kanazawa Univ., [2] Ints. Frontier Sci. Initiative, Kanazawa Univ.,
[3] Tengu Nakata Honten Co., Ltd.)

16:18 1Mp13 Effect of the growth factor sericin on industrial mammalian cells.
·····○Naoki Shimizu [1], Yuya Murakami [1], Satoshi Terada [1], Ryo Masugi [2], Naoki Umeda [2], Jun Takahashi [2]
([1] Grad. Sch. Eng. Fukui Univ., [2] SEIREN Co. Ltd.)

16:30 1Mp14 Optimization of cardiac progenitor cell induction process from iPSCs using design of experiments
·····○Yosuke Katayama, Hirokazu Akiyama, Kazunori Shimizu, Hiroyuki Honda
(Grad. Sch. Eng., Nagoya Univ.)

16:42 1Mp15 Antiproliferative effect of membrane vesicles produced by *Bifidobacterium dentium* on Jurkat cells
····· ○Mizuho Maeda [1], Kenta Irie [2], Miku Okada [2], Takashi Fukuda [2], Jun Kawamoto [3], Tomoya Imai [4],
Tatsuo Kurihara [3], Atsushi Kurata [2], Koichi Uegaki [2]
([1] Grad. Sch. Agric., Kindai Univ., [2] Fac. Agric., Kindai Univ., [3] Inst. Chem. Res., Kyoto Univ.,
[4] RISH, Kyoto Univ.)

16:54 1Mp16 Kinetic analysis of circular cell culture system for the production of cultured meat using algae and animal cells
·····○Taki Kato [1], Riku Yamamoto [1,3], Yuji Haraguchi [2], Tatsuya Shimizu [2], Masahiro Kino-oka [1,3]
([1] Dept. Biotechnology, Grad. Sch. Eng., Osaka University,
[2] Inst. Adv. Biomed. Eng. Sci., Tokyo Women Med. Univ.,
[3] Research Base for Cell Manufacturability, Grad. Sch. Eng., Osaka University)

Room N 132 (Engineering Building #1) (13:30–17:06)

【Environmental Technology, Wastewater Treatment; Bioremediation; Biomass, Bioresource and Energy Engineering】

13:30 1Np01 Advanced Photocatalytic Inactivation Process of Toxigenic *M.aeruginosa*: Insights on Time-dependent Physiological Regulation Mechanism
·····○Guangqi An, Hongjian Zhang, Yingnan Yang (Univ. Tsukuba)

13:42 1Np02 Metal biosorption and cation dynamics under strongly acidic environment using acid tolerant bacteria
····· ○Chikara Takano [1], Kazunori Nakashima [1], Hideki Aoyagi [2], Satoru Kawasaki [1]
([1] Fac. Eng., Hokkaido Univ., [2] Inst. Life Environ. Sci., Univ. Tsukuba)

13:54 1Np03 Characterization of a novel halotolerant aerobic selenate-reducing bacterium, *Citrobacter koseri* Y2
····· ○Shunsuke Okahata, Yuya Ueda, Daisuke Inoue, Michihiko Ike (Grad. Sch. Eng., Osaka Univ.)

14:06 1Np04 Treatment of manganese-containing mine water using a pilot-scale rapid sand filter
····· Tomohiro Inaba [1], Hidenobu Aizawa [1], Tomo Aoyagi [1], Yuya Sato [1], Tomoyuki Hori [1], Takuro Nishimura [2], ○Hiroshi Habe [1]
([1] Environ. Manage. Res. Inst., AIST, [2] Nagaoka International Corp.)

14:18 1Np05 Phosphorus recovery from food waste using compost
····· ○Noboru Takiguchi, Koki Watanabe (Coll. Sci. Eng., Kanazawa Univ.)

14:30 Break

14:42 1Np06 Analysis of ultra-low-concentration-zinc removal mechanism of bacteria from plating plant wastewater treatment sludge
····· ○Ryuji Yanagihara, Takashi Ohtsuki (Integr. Grad. Sch. Med. Eng. Agric. Sci, Univ. Yamanashi)

14:54 1Np07 Characterization of chemoautotrophic bacteria that grow by dissimilatory phosphite oxidation
····· ○Takafumi Yamanaka, Junya Kato, Takahisa Tajima, Yutaka Nakashimada, Takenori Ishida, Takeshi Ikeda, Hisakage Funabashi, Akio Kuroda, Ryuichi Hirota
(Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)

15:06 1Np08 Search for methods to control odor production by microorganisms involved in odors at sewage treatment plants
····· ○Satoshi Motokado (Integr. Grad. Sch. Med. Eng. Agric. Sci, Univ. Yamanashi)

15:18 1Np09 Characteristics of ammonia gas utilization by ammonia gas tolerant bacteria *Klebsiella* sp. isolated from raccoon-dog feces.
····· ○Kenta Iida, Keiji Kiyoshi, Naoto Yoshida (Grad. Sch. Agric., Univ. Miyazaki.)

15:30 1Np10 Ammonia gas tolerant mechanism and chemolithoautotrophic property of psychrophilic ammonia gas tolerant bacterium, *Raoultella terrigena* PB6
····· ○Kazuma Kondo, Keizi Kiyoshi, Naoto Yoshida (Grad. Sch. Agric., Univ. Miyazaki.)

15:42 Break

15:54 1Np11 Identification and analysis of enzymes involved in c-di-GMP synthesis and degradation in an ammonia oxidizing bacterium
····· ○Akiko Nishimura, Kei Mizusaki, Akio Suizu, Tasuku Takahashi, Hidenori Kanika, Shinji Iijima
(Fac. Eng., Aichi Inst. Technol.)

16:06 1Np12 Study on nitrification and denitrification tools using biofilms for wastewater treatment
····· ○Tomoki Gamo [1], Yoshihiro Ojima [1], Sayaka Matsubara [2], Yoshihiro Fukumoto [2], Masayuki Azuma [1]
([1] Grad. Sch. Eng., Osaka Metro. Univ., [2] Kansaikako Corp.)

16:18 1Np13 The environmental effect of plants in smoking area
····· ○Jeong Wook Jo, Sung Woo Yang, Gyu Won Lee, Jae Hun Kim, Ye Jin Kim, Hyung Joo Kim
(Dept. of Biological Engineering, Konkuk Univ.)

16:30 1Np14 Adsorption of H1N1 influenza virus from water-immersed leaf suspensions of live indoor plants
····· ○Sung Woo Yang, Jeong Wook Jo, Gyu Won Lee, Jae Hun Kim, Ye Jin Kim, Hyung Joo Kim
(Dept. of Biological Engineering, Konkuk Univ.)

16:42 1Np15 Study on relationship between plant and sediment in aquatic environment
····· ○Kaoru Igarashi, Quoc Thinh Tran, Motoki Kubo (Grad. Sch. Life Sci., Ritsumeikan Univ.)

16:54 1Np16 Effects of 1,3 Di-Chloropropene agrochemical on earthworm and bacterial biomass
····· ○Muhammad Akram Kharral, Quoc Thinh Tran, Motoki Kubo
(Grad. Sch. Life Sci., Ritsumeikan Univ.)

Room O 142 (Engineering Building #1) (13:30–17:06)

【Bioremediation; Biomass, Bioresource and Energy Engineering; Environmental Technology, Wastewater Treatment】

13:30 1Op01 Phenotypic heterogeneity of *Comamonas thiooxydans* R2 under phenol-fed chemostat
·····◯Kenshi Suzuki[1,2], Yutaro Uehara[3], Chiho Minakuchi[1,2], Futoshi Kurisu[2,4], Hiroyuki Futamata[5,6,7], Hideaki Nojiri[1,2]
([1] Grad. Sch. Agric. Life Sci., Univ. Tokyo, [2] CRIIM, Univ. Tokyo, [3] Grad. Sch. Eng., Univ. Tokyo, [4] Grad. Sch. Eng. Res. Ctr. WET., Univ. Tokyo, [5] Grad. Sch. Sci. Technol. Shizuoka Univ., [6] Grad. Sch. Integr. Sci. Technol., Shizuoka Univ., [7] Res. Inst. Green Sci. Technol., Shizuoka Univ.)

13:42 1Op02 Feature of microbial community structure enable to functional homeostasis of complex microbial systems
·····◯Rei Ikeda[1], Masahiro Honjo[2], Nobuhiro Takahashi[1], Reika Mimoto[3], Yasuhisa Saito[4], Takashi Okada[5], Motohiko Kimura[1], Hiroyuki Futamata[6]
([1] Grad. Sch. Integr. Sci. Technol., Shizuoka Univ., [2] Grad. Sch. Sci. Technol. Shizuoka Univ., [3] Fac. Eng. Shizuoka Univ., [4] Grad. Sch. Sci. Eng. Shimane Univ., [5] Inst. Med. Biol. Kyoto Univ., [6] Res. Inst. Green Sci. Technol., Shizuoka Univ.)

13:54 1Op03 Genetic characterization of deep-sea microorganisms in the Japan Trench sediments
····· ◯Kana Jitsuno[1,2], Yohei Nishikawa[2,3], Tatsuhiko Hoshino[4], Fumio Inagaki[4,5], Takeyama Haruko[1,2,3,6]
([1] Grad. Sch. Adv. Sci. Eng., Waseda Univ., [2] CBBD-OIL, AIST-Waseda Univ., [3] Res. Org. Nano Life Innov., Waseda Univ., [4] JAMSTEC, [5] Grad. Sch. Sci., Tohoku Univ., [6] Inst. Adv. Res. Biosyst. Dynam., Waseda Res. Inst. Sci. Eng., Waseda Univ.)

14:06 1Op04 Characterization of 4-hydroxyacetophenone degradation in *Sphingomonas bisphenolicum* strain AO1
·····◯Lu Liu, Miho Sasaki, Yoshinobu Matsumura (Grad. Sch. Sci. Eng., Kansai Univ.)

14:18 1Op05 Biodegradation of vulcanized rubber is associated with removal of calcium carbonate filler by wood decay fungi
·····◯Shin Sato[1], Fuminori Yoneyama[2] ([1] Tottori University of Environmental Studies, [2] Sumitomo Riko Company Ldt)

14:30 Break

14:42 1Op06 Effect of chemical equilibrium of sulfite ion on microbial degradation of sulfanilic acid
·····◯Mahiro Tsurimoto, Mayo Oonishi, Akihisa Kita, Nobuki Hayase (National Institute of Technology, Niihama College)

14:54 1Op07 Enzymes and Pathways Involved in the Aerobic Chloroethenes Degradation by *Pseudonocardia* sp. D17
·····◯Ryugo Nishimine, Kousuke Minamizono, Daisuke Inoue, Michihiko Ike (Grad. Sch. Eng., Osaka Univ.)

15:06 1Op08 Utilization of acid tolerant arsenic absorbing bacteria for acid mine drainage treatment
····· ◯Sohei Iwama[1], Chikara Takano[1], Kazunori Nakashima[1], Hideki Aoyagi[2], Satoru Kawasaki[1]
([1] Grad. Sch. Eng., Hokkaido Univ., [2] Inst. Life Environ. Sci., Univ. Tsukuba)

15:18 1Op09 Establishment and Social Implementation of an Ultra-Efficient Edible Oil-containing Wastewater Treatment Method Using Microorganisms with Remarkable Oil Degradation Capabilities
····· ◯Yuki Ohara[1], Junichi Kanie[1], Katsutoshi Hori[1,2] ([1] Friendmicrobe, [2] Grad. Sch. Eng., Nagoya Univ.)

15:30 1Op10 Lignin degradation activities of herbivorous land crabs
·····◯Katsuhide Miyake, Yuma Nagakura (Fac. Sci. Tech., Meijo Univ.)

15:42 Break

15:54 1Op11 Enzymatic Characterization of Unused Biomass Degradation Using the Clostridium cellulovorans Cellulosome

·····◯Mohamed Yahai Eljonaid [1], Hisao Tomita [1], Fumiyoshi Okazaki [1,2,3], Yutaka Tamaru [1,2,3]
([1] Grad. Sch. Bioresour., Mie Univ.,
[2] Department of Bioinfomatics, Mie University Advanced Science Research Center, Mie University,,
[3] Smart Cell Innovation Research Center, Mie University)

16:06 1Op12 Study of a cultivation method of marine hydrogen-oxidizing bacterium Hydrogenovibrio marinus MH-110

·····◯Koya Okabe [1], Manami Matsuuchi [2], Akiko Hanada [3], Tomoaki Kasuga [3], Tsuyoshi Aketo [3], Hirofumi Nishihara [1]
([1] Grad. Sch. Agric., Practical Agric. Food Sci., Ibaraki Univ.,
[2] Dept. Food and Life Sci., Coll. Agric., Ibaraki Univ., [3] Central Res. Lab., Taiheiyo Cement Corp.)

16:18 1Op13 Analysis of gas substrate consumption of a marine hydrogen-oxidizing bacterium *Hydrogenovibrio marinus* MH-110 and screening of new marine isolates

·····◯Aoshi Noda [1], Saya Iino [2], Hirofumi Nishihara [1] ([1] Grad. Sch. Agric., Practical Agric. Food Sci., Ibaraki Univ., [2] Dept. Food and Life Sci., Coll. Agric., Ibaraki Univ.)

16:30 1Op14 Investigation of the growth promotion mechanism of a novel cyanobacterium growth promoting bacteria *Rhodococcus cerastii* AF2108

·····◯Pei Yu Tan [1], Masashi Ishida [2], Yuta Kato [3], Tai-Ying Chiou [2], Akihiro Hachikubo [2], Masaaki Konishi [2]
([1] Grad. Sch. Eng., Kitami Inst. Technol., [2] Kitami Inst. Technol., [3] Kankyo Daizen Company, Ltd)

16:42 1Op15 Development of growth -promoting technology for microalgae by using calcium silicate hydrate

·····◯Yuka Yokoi [1], Kentaro Waga [1], Akiko Hanada [2], Tomoaki Kasuga [2], Tsuyoshi Aketo [2], Tomoko Yoshino [1], Atsushi Arakaki [1], Tsuyoshi Tanaka [1]
([1] Grad. Sch. Eng., Tokyo Univ. Agric. Technol., [2] Taiheiyo Cement Corp.)

16:54 1Op16 Optimization of culture condition of the colonial microalga *Botryococcus braunii* single-cells using response surface methodology

·····◯Kengo Murayama, Takashi Ohtsuki (Integr. Grad. Sch. Med. Eng. Agric. Sci, Univ. Yamanashi)

Luncheon Seminars（11:45–12:45）

Room B IB015

1L-B01 On-chip Biotechnologies Co., Ltd.

Room C IB014

1L-C01 Tosoh Corporation

Room D IB013

1L-D01 Nihon Waters K.K.

Corporate Research Seminars for Students（17:30–18:30）

Room E ES Hall

1C-E01 KONICA MINOLTA, INC.

Room F ES021

1C-F01 Saraya Co., Ltd.

Room G ES022

1C-G01 Friend Microbe Inc.

Room H ES024

1C-H01 Bacchus Bio innovation Co., Ltd.

Room I ES025

1C-I01 Osaka Organic Chemical Industry Ltd.

September 4, 2023

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

Award Lectures (Young Scientist Award)

Room G ES022 (15:10–15:25)

15:10 2A-Gp01 〈**Young Scientist Award**〉 Chair: **Makoto Ashiuchi**

Bioengineering approaches for hair follicle regeneration

……◯Tatsuto Kageyama [1,2] ([1] KISTEC, [2] Grad. Sch. Eng., Yokohama Natl. Univ.)

Room I ES025 (15:10–15:25)

15:10 2A-Ip01 〈**Young Scientist Award**〉 Chair: **Tsuyoshi Tanaka**

Biotechnological research on the cytoplasmic and periplasmic metabolisms in bacteria producing useful compounds

…… ◯Naoya Kataoka (Org. Res. Initiatives, Yamaguchi Univ.)

Award Lectures (Young Asian Biotechnologist Prize)

Room J Okuma Hall (15:10–15:50)

15:10 2A-Jp01 〈**Young Asian Biotechnologist Prize**〉

Recovery of valuable bioactive compounds from renewable resources towards a sustainable circular bioeconomy: A solution to global issues

…… ◯Pau-Loke Show [1,2] ([1] Dept. Chem. Eng., Khalifa Univ., UAE, [2] Dept. Chem. Environ. Eng., Univ. of Nottingham Malaysia)

15:30 2A-Jp02 〈**Young Asian Biotechnologist Prize**〉

Engineering strategies for enhancing microalgae lipid production using effluents of coke-making wastewater

…… ◯Chun-Yen Chen [1], Yu-Han Chang [1,2], Jo-Shu Chang [1,2], Jhuan-Ling Hsu [1] ([1] Natl. Cheng Kung Univ., Taiwan, [2] Tunghai Univ., Taiwan)

Symposium

Room A IB Lecture Hall (9:00–11:00)

Toward the Development of Manufacturing and Processing Technologies for Future Protein Resources to Tackle the Protein Crisis and the Creation of a New Food System

9:00 Opening Remarks

……Jun Ogawa

Chair: **Jun Ogawa**

9:02 2S-Aa01 Koji mold opens up a new food industry
..... ○Daisuke Hagiwara (Fac. Life and Env. Sci., Univ. Tsukuba)

9:25 2S-Aa02 Trends and issues in research and development of cell cultivated food
..... ○Takanori Hasegawa (R&D Center, NH Foods Ltd.)

9:48 2S-Aa03 What is needed for mass culture and scale-up of future protein resources?
..... ○Eiji Nagamori (Grad. Sch. Eng., Osaka Inst. Technol.)

Chair: **Eiji Nagamori**

10:11 2S-Aa04 Breakthroughs in food processing with 3D food printers
..... ○Hidemtisu Furukawa [1,2], Jun Ogawa [1,2], Nahin Shlblee [1,2], Yosuke Watanabe [1,2], Yuki Kainuma [1,2], Shoko Usui [1,2], Kei Toba [1,2], Hirofumi Sei [1,2], Ajit Khosla [2]
([1] Grad. Sch. Sci. Eng., Yamagata Univ., [2] Soft & Wet mat. Eng. Lab. (SWEL))

10:34 2S-Aa05 Consumer acceptance of novel foods
..... ○Ishikawa Shin-ichi (Sch. Food Ind. Sci., Miyagi Univ.)

10:57 Closing Remarks
..... Eiji Nagamori

Room A IB Lecture Hall (13:00–15:00)

100th Anniversary Symposium: The Future of Biotechnology (2050) Part 4 —Future Prospects of Medical Bioengineering—

13:00 Opening Remarks
..... Hideki Aoyagi

Chair: **Masamichi Kamihira**

13:02 2S-Ap01 Toward the creation of next-generation transdermal vaccines as alternatives to injection
..... ○Masahiro Goto (Grad. Sch. Eng., Kyushu Univ.)

13:27 2S-Ap02 Next-generation biologics production using mammalian cell
..... ○Takeshi Omasa [1,2,3] ([1] Grad. Sch. Eng., Osaka Univ., [2] MAB, [3] OTRI, Osaka Univ.)

Chair: **Hiroyuki Honda**

13:52 2S-Ap03 Can we organize in vitro organs in 2050 that can completely reproduce the vivo responses?
..... ○Yasuyuki Sakai (Grad. Sch. Eng., Univ. Tokyo)

14:17 2S-Ap04 Design of the future (2050) fermentation system
..... ○Shutaro Ishikawa (ABLE)

Chairs: **Hiroyuki Honda, Masamichi Kamihira**

14:42 Panel Discussion

Room B IB015 (9:00–11:00)

Development of Biomolecular-based Pythagorean Devices

9:00 Opening Remarks
..... Kohsuke Honda

Chair: **Kohsuke Honda**

9:02 2S-Ba01 Engineering of halogenase and dehalogenase for sustainable technology
..... ○Pimchai Chaiyen (Vidyasirimedhi Institute of Science and Technology (VISTEC))

9:27 2S-Ba02 Engineering RNA-based switches for gene expression control
……◯Keisuke Fukunaga (ELSI, Tokyo Tech)

Chair: **Daisuke Kiga**

9:47 2S-Ba03 Efficient design and construction of genetic parts and circuits
…… ◯Jeong Wook Lee (Dept. Chem. Eng., POSTECH)

10:12 2S-Ba04 Development of energy harvesting devices by architect of bio- and macromolecules
……◯Madoka Takai (Grad. Sch. Eng., Univ. Tokyo)

Chair: **Tomoaki Matsuura**

10:32 2S-Ba05 Engineering a Cell-free Platform for robust expression and functioning of membrane proteins in Artificial Cell
……◯Kwanwoo Shin (Sogang University, Seoul , Korea)

10:57 Closing Remarks
…… Tomoaki Matsuura

Room B IB015 (13:00–15:00)

Design and Creation of Functional Artificial Biomolecular Tools to Obtain Unknown Biological Information

Chair: **Noriho Kamiya**

13:00 2S-Bp01 Introduction: biomolecular tools for obtaining unclarified biological information
……◯Satoshi Yamaguchi (Grad. Sch. Eng., Univ. Tokyo)

13:10 2S-Bp02 Florescent proteins and antibodies open the door to live cell imaging
…… ◯Tetsuya Kitaguchi (CLS, Tokyo Tech)

13:35 2S-Bp03 Designing artificial receptors to manipulate cell fates
……◯Masahiro Kawahara (NIBIOHN)

Chair: **Tamotsu Zako**

13:55 2S-Bp04 Creation of artificial biomolecules that function in biological systems
…… ◯Noriho Kamiya [1,2] ([1] Grad. Sch. Eng., Kyushu Univ., [2] CFC, Kyushu Univ.)

14:15 2S-Bp05 Molecular design and construction of functional proteins and complexes
…… ◯Ryoichi Arai [1,2] ([1] Fac. Textile Sci. Technol., Shinshu Univ., [2] Inst. Biomed. Sci., Shinshu Univ.)

14:35 2S-Bp06 Functional expression of olfactory receptors and their application for the development of odorant sensors
…… ◯Masafumi Yohda, Ikumi Takayama, Yosuke Fukutani, Tomoya Yoshii, Takashi Ikuta, Kenzo Maehashi
(Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)

Room E ES Hall (9:00–11:00)

Toward a Comprehensive Understanding of Bottom Fermenting Yeast

9:00 Opening Remarks
…… Yoichi Noda

Chair: **Hiroyuki Yoshimoto**

9:02 2S-Ea01 Analysis of the beer fermenting yeasts using low molecular weight compounds
……◯Yoichi Noda (Grad. Sch. Agric. Life Sci., Univ. Tokyo)

9:15 2S-Ea02 Chromosomal changes of bottom-fermenting yeast contribution to brewing characteristics
……◯Tomoko Takahashi (Asahi Quality & Innovations, Ltd.)

Chair: **Yoichi Noda**

9:40 2S-Ea03 Analysis of brewing characteristics of the bottom-fermenting yeast using comprehensive analytical techniques
……◯Hiroyuki Yoshimoto (Kirin Holdings Co., Ltd.)

Chair: **Hiroyuki Horiuchi**

10:05 2S-Ea04 Genetic instability in flocculation of bottom-fermenting yeast
……◯Masahide Sato [1,2] ([1] Sapporo Breweries Ltd., [2] Value Creation Frontier Laboratories)

10:30 2S-Ea05 The ability of the bottom-fermenting yeast to assimilate maltose and maltotriose
……◯Haruyo Hatanaka (Suntory Holdings Ltd.)

10:55 Closing Remarks
……Hiroyuki Horiuchi

Room E ES Hall (13:00–15:00)

Diversity of Microbial Carbon-Fixing Metabolism: New Platforms for Synthetic Biology

13:00 Opening Remarks
……Yasuyoshi Sakai

Chair: **Yasuyoshi Sakai**

13:03 2S-Ep01 Enzymes from hyperthermophilic archaea related to C1 metabolism
……◯Haruyuki Atomi (Grad. Sch. Eng., Kyoto Univ.)

13:21 2S-Ep02 Impacts of high CO_2 concentration on the central carbon metabolism of (hyper)thermophiles
……◯Takuro Nunoura (JAMSTEC)

Chair: **Haruyuki Atomi**

13:46 2S-Ep03 Biohydrogen production from one carbon substrates using a hyperthermophilic archaeon, *Thermococcus onnurineus* NA1
……Hyun Sook Lee [1,2], ◯Sung Gyun Kang [1,2] ([1] Korea Institute of Ocean Science and Technology, [2] University of Science and Technology)

14:11 2S-Ep04 CO_2-fixing biotechnology using microbial electrochemistry
……◯Souichiro Kato [1,2,3] ([1] BPRI, AIST, [2] Grad. Sch. Agric., Hokkaido Univ., [3] Grad. Sch. Eng. Sci., Osaka Univ.)

14:36 2S-Ep05 Utilization of carbon resources through microbial C1- fixation reactions to bioproduction
……◯Yasuyoshi Sakai, Hiroya Yurimoto (Grad. Sch. Agric., Kyoto Univ.)

14:58 Closing Remarks
……Haruyuki Atomi

Room F ES021 (9:00–11:00)

Recent Developments of Biomanufacturing for Circular Bioeconomy

9:00 Opening Remarks
……Masahito Hosokawa

Chair: **Masahito Hosokawa**

9:02 2S-Fa01 Development of Japanese biofoundry by using bio-digital platform
……◯Akihiko Kondo (Grad. Sch. Sci. Technol. Innov., Kobe Univ.)

9:29 2S-Fa02 Trends surrounding biomanufacturing and Japan's efforts
..... ○Daisuke Ishizuka (METI)

9:56 Break

Chair: **Akihiko Kondo**

10:01 2S-Fa03 Industrial biotechnology as enabler for Circular Bio-economy
..... ○Carsten Mailand Hjort (Novozymes A/S)

10:28 2S-Fa04 Development of industrial enzymes from uncultured microbial genome database
..... ○Soichiro Tsuda (bitBiome Inc.)

10:55 Closing Remarks
..... Akihiko Kondo

Room F ES021 (13:00–15:00)

The Connection Between Data Science and Environmental Biotechnology

13:00 Opening Remarks
..... Mei-Fang Chien

Chair: **Tomoyuki Hori**

13:02 2S-Fp01 Unraveling the complexity of ecosystems through environmental DNA monitoring and data-driven analysis
..... ○Michio Kondoh (Grad. Sch. Life Sci., Tohoku Univ.)

13:27 2S-Fp02 Spatio-temporal dynamics of microbiomes and interaction networks
..... ○Hirokazu Toju (CER, Kyoto Univ.)

Chair: **Mei-Fang Chien**

13:52 2S-Fp03 Environmental DX based on bioprocess informatics
..... ○Jun Kikuchi [1,2,3,4]
([1] CSRS, RIKENS, [2] Grad.Sch.Bioagri., Nagoya Univ., [3] Grad.Sch.Med.Life., Yokohama City Univ., [4] Grad.Sch.Med., Chiba Univ.)

14:17 2S-Fp04 Industrial wastewater treatment technologies developed by integrated understanding of microbial communities
..... ○Tomoyuki Hori (EMRI, AIST)

Chair: **Tomoyuki Hori**

14:37 2S-Fp05 Data science unfolds the mechanisms of environmental remediation by complex biological systems and its challenges
..... ○Mei-Fang Chien, Hiroshi Kudo (Grad. Sch. Environ. Stud. Tohoku Univ.)

14:57 Closing Remarks
..... Kazuhide Kimbara

Room H ES024 (9:00–11:00)

Career Symposium for PhD Students and Postdoctoral Fellows

9:00 Opening Remarks
..... Wataru Aoki

Chair: **Kei Kanie**

9:05 2S-Ha01 A career story: my approach to be a researcher bridging between a new science and industry
..... ○Mayu Shibuta (Astellas Pharma. Inc.)

9:20 2S-Ha02 My small laboratory was set up at a university overlooking Lake Biwa.
····· ○Masahito Ishikawa [1,2] ([1] Dept. Biosci., Nagahama Inst. Bio-Sci. Technol., [2] PRESTO, JST)
Chair: **Wataru Aoki**

9:35 2S-Ha03 My career, academia
····· ○Hiroshi Kikukawa (Grad. Sch. Eng., Hokkaido Univ.)
Chair: **Natsuko Miura**

9:50 2S-Ha04 The data scientist career path from metabolic engineering researcher
····· ○Kento Tokuyama (Chugai Pharmaceutical Co., Ltd.)

10:05 2S-Ha05 Pursuing an Academic Career: transitioning to medical research, studying abroad alone, raising a child, and the next steps
····· ○Nao Nishida (WIAS, Waseda Univ.)
Chair: **Wataru Aoki**

10:20 2S-Ha06 The Career Path of the Engineering Researcher in the Medical Field: Medical-Engineering Collaboration and the Future
····· ○Yasushi Sato (Adv. Med. Eng. Center, Asahikawa Medical Univ.)

10:35 Discussion
····· All Speakers

10:55 Closing Remarks
····· Kei Kanie

Room H ES024 (13:00–15:00)

Expected Innovation for Brewing and Fermentation Technology

13:00 Opening Remarks
····· Tasuku Yamada
Chair: **Yoji Hata**

13:05 2S-Hp01 Suntory whisky for the next 100 years
····· ○Katsunori Kurihara (SUNTORY SPIRITS LIMITED)
Chair: **Tasuku Yamada**

13:35 2S-Hp02 Development of sustainability business through co-creation with local communities and companies, with craft beer as a springboard
····· ○Ichiro Moda (Asahi YOU.US)
Chair: **Cho Sho**

14:00 2S-Hp03 Fermentation technology in the upcycling of unutilized biomass
····· ○Toshikazu Sugimoto (FERMENSTATION Co., Ltd.)
Chair: **Takaomi Yasuhara**

14:25 2S-Hp04 Data-driven bioproduction management system
····· ○Tetsushi Kawai (Chitose Laboratory Corp.)

14:50 Closing Remarks
····· Cho Sho

Room J Okuma Hall (9:00–11:44)

KSBB-BEST-SBJ Joint Symposium Session 1: New Trends in Enzyme and Microbial Technology

9:00 Opening Remarks
..... Hideo Nakano
Chair: **Taizo Hanai**

9:02 2S-Ja01 Enzyme studies and engineering by single molecule display system coupled with NGS and bioinformatics
..... ○Jasmina Damnjanović, Hideo Nakano (Grad. Sch. Bioagric. Sci., Nagoya Univ.)
Chair: **Jasmina Damnjanović**

9:22 2S-Ja02 Exploring a new biocatalyst for polyethylene biodegradation and its future directions
..... ○Soo-Jin Yeom (Sch. Biol. Sci. Techol., Chonnam National University, South Korea)
Chair: **Soo-Jin Yeom**

9:42 2S-Ja03 Utilization of genome information in enzyme industry
..... ○Hirotaka Matsubara (Amano Enzyme Inc. Innovation center.)
Chair: **Jasmina Damnjanović**

10:02 2S-Ja04 Enzyme-based biocatalysts for CO_2 capture
..... ○Chang Sup Kim (Yeungnam University)

10:22 Break
Chair: **Chang Sup Kim**

10:42 2S-Ja05 Synthetic biology for microbial production
..... ○Taizo Hanai (Grad. Sch. Agric., Kyushu Univ.)
Chair: **Taizo Hanai**

11:02 2S-Ja06 Towards carbon net zero using microalgae for high-value compounds
..... ○I-Son Ng (National Cheng Kung University)
Chair: **I-Son Ng**

11:22 2S-Ja07 Synthetic gene expression control systems in microorganisms
..... ○SangWoo Seo (Sch. Chem. Biol. Eng., Seoul National University)

11:42 Closing Remarks
..... SangWoo Seo

Room J Okuma Hall (13:00–15:00)

KSBB-BEST-SBJ Joint Symposium Session 2: Current Advances in Animal Cell Technology

13:00 Opening Remarks
..... Kazuhito Fujiyama
Chair: **Kazuhito Fujiyama**

13:02 2S-Jp01 Chimeric immune cells: Engineered to expand their therapeutic potentials
..... ○Hee Ho Park (Dept. Bioeng., Coll. Eng., Hanyang Univ., Republic of Korea)
Chair: **Hee Ho Park**

13:22 2S-Jp02 Expansion and differentiation of human hematopoietic stem cells for immunotherapy
..... ○Chao-Ling Yao (Dept. Chem. Eng., Natl. Cheng Kung Univ., R.O.C)

13:42 Break
Chair: **Chao-Ling Yao**

13:52 2S-Jp03 Morphology-based quality control and intelligent process management for cell-based product manufacturing
..... ○Ryuji Kato [1,2] ([1] Grad. Sch. Pharm. Sci., Nagoya Univ.,
[2] Inst. Nano-life Sys., Inst. Inov. Fut. Soc., Nagoya Univ.)

Chair: **Ryuji Kato**

14:12 2S-Jp04 New medical solutions created by Cyfuse's innovative Bio-3D printing technology
……◯Toshihiko Maekawa (Cyfuse Biomedical)

14:32 2S-Jp05 Improving CHO cells' energy metabolism using process engineering approaches
…… ◯Jong Youn Baik (Inha University)

14:52 Closing Remarks
……Jong Youn Baik

Room J Okuma Hall (16:00–18:00)

International Symposium on Southeast Asia
–Current Status of Biotechnology and Biomanufacturing in Southeast Asia–

16:00 Opening Remarks
…… Takao Ohashi

Chair: **Takao Ohashi**

16:10 2S-Jp06 Engineering of *Escherichia coli* chromosome to generate plasmid-free strains which are capable of producing valuable compounds
…… ◯Daisuke Koma (ORIST)

16:35 2S-Jp07 Biohydrogen and methane production process from biomass and hydrolysate of *Chlorella* sp. and *Chlorell*a sp. TISTR 8411
…… ◯Alissara Reungsang, Prawan Phanduang, Apilak Salakkam
(Dept. Biotechnol., Khon Kaen Univ., Khon Kaen, Thailand)

Chair: **Yoshihiro Ojima**

17:00 2S-Jp08 Engineering *Saccharomyces cerevisiae* as whole-cell biocatalysts for biochemical production
…… ◯Surisa Suwannarangsee, Kan Tulsook, Piyada Bussadee, Ngoentra Samnaknit, Verawat Champreda
(BIOTEC, Thailand)

Chair: **Jun Ishii**

17:25 2S-Jp09 Building a sustainable bioeconomy in Singapore through synthetic biology
……◯Matthew Chang
(NUS Synthetic Biology for Clinical and Technological Innovation, National University of Singapore)

17:50 Closing Remarks
……Yoshihiro Ojima

Room K Okuma Lecture Room 2F (9:00–11:00)

Development of New Research Areas in Microbiology Through Inter-institutional Collaboration

9:00 Opening Remarks
…… Nomura Nobuhiko

Chair: **Hiroyuki Azakami**

9:02 2S-Ka01 About Microbiology Research Center for Sustainability [MiCS]
……◯Nomura Nobuhiko (MiCS, Univ Tsukuba)

9:25 2S-Ka02 Challenge to establish advanced bioengineering research platform by integrating biotechnology and digital technology
····· ○Tomohisa Hasunuma [1,2,3] ([1] EGBRC, Kobe Univ.,, [2] Grad. Sch. Sci. Technol. Innov., Kobe Univ., [3] CSRS, RIKENS)

9:48 2S-Ka03 Protein research from environmental microbes in cold and anoxic environments
····· ○Tomohiro Watanabe, Manabu Fukui (ILTS, Hokkaido Univ.)

10:11 2S-Ka04 Formation of a network that connects various types of intelligence: individuality that thrives on aggregated knowledge
····· ○Masakazu Kataoka (Bio.Med.Eng Grad.Sch. Shinshu Univ.)

10:34 2S-Ka05 Characteristics of thermotolerant microbes and technology development of green energy by its application
····· ○Mamoru Yamada [1,2] ([1] Yamaguchi Univ. Gra, Sch. Sci. Tech. Innov., [2] Yamaguchi Univ. TMR)

10:57 Closing Remarks
····· Hiroyuki Azakami

Room K Okuma Lecture Room 2F (13:00–15:00)

Synthetic Biology-Facilitated Next Generation Drug Discovery of Engineered Natural Products

Chair: **Yuta Tsunematsu**

13:00 2S-Kp01 Harnessing natural products pathway toward drug discovery
····· ○Yuta Tsunematsu (Grad. Sch. Bioagric., Sci., Nagoya Univ.)

13:20 2S-Kp02 Precise edit of type I polyketide synthase leading to next-generation natural product chemistry
····· ○Kei Kudo, Kazuo Shin-ya (AIST)

13:40 2S-Kp03 Synthetic Biology of Natural Products for Drug Development
····· ○Teigo Asai (Grad. Sch. Pharm., Tohoku Univ.)

14:00 2S-Kp04 Application of Single-Cell Genomics for Obtaining Genetic Information from Uncultured Microbes
····· ○Masahito Hosokawa [1,2,3,4,5] ([1] Grad. Sch. Adv. Sci. Eng., Waseda Univ., [2] Res. Org. Nano Life Innov., Waseda Univ., [3] Inst. Adv. Res. Biosyst. Dyn., Waseda Res. Inst. Sci. Eng., Waseda Univ., [4] CBBD-OIL, AIST-Waseda Univ., [5] bitBiome)

14:30 2S-Kp05 Discovery of the prothrombolytic compound SMTP and its development as a drug for treatment of ischemic stroke
····· ○Keiji Hasumi [1,2] ([1] TMS Co., [2] Grad. Sch. Agric., Tokyo Univ. Agric. Technol.)

Oral Presentations

Room A IB Lecture Hall (15:30–17:42)

【Enzymology, Enzyme; Proteins】

15:30 2Ap01 Development of a single-molecule display system for the directed evolution of microbial transglutaminase
····· ○Ai Sugiyama [1], Jasmina Damnjanović [1], Naoto Nemoto [2], Hideo Nakano [1] ([1] Grad. Sch. Bioagric., Sci., Nagoya Univ., [2] Grad. Sch. Sci., Engineering., Saitama Univ.)

15:42 2Ap02 Development of a platform for directed evolution of D-amino acid oxidase using single-molecule display technology
····· ○Kakeru Ikeda [1], Nana Odake [1], Jasmina Damnjanović [1], Naoto Nemoto [1], Hideo Nakano [2] ([1] Grad. Sch. Bioagric., Sci., Nagoya Univ., [2] Grad. Sch. Sci., engineering Saitama Univ.)

15:54 2Ap03 Improvement of cholesterol oxidase for double kinetic assay.
……◯Saki Yamamoto[1], Fuka Toyama[2], Yoshiaki Nishiya[1,2] ([1] Dept. Life Sci., Setsunan Univ., [2] Grad. Sch. Sci. Eng., Setsunan Univ.)

16:06 2Ap04 Functional analysis of the chitin-binding domain of GH family 19 Chitinase from an actinomycete *Cellulosimicrobium*.
…… ◯Daisuke Niki[1], Tomohiro Bito[2], Katsuhiko Shimizu[3], Jiro Arima[2] ([1] United Grad. Sch. Agric. Sci., Tottori Univ., [2] Fac. Agric., Tottori Univ., [3] CoRE., Tottori Univ.)

16:18 2Ap05 Identification of the residues involved in the substrate selectivity of lactate dehydrogenase from *Geobacillus stearothermophilus*
…… ◯Momoka Nakamura[1], Syotaro Yamaguchi[2], Yuya Simozawa[3], Yoshiaki Nishiya[1] ([1] Grad. Sch. Sci. Eng., Setsunan Univ., [2] Sci. Eng., Setsunan Univ., [3] Konan Chemical Ind. Co., Ltd.)

16:30 Break

16:42 2Ap06 Influence of the mobile loop and flavin proximal regions on the reactivity of glycine oxidase from *Geobacillus kaustophilus*
…… ◯Hitomi Taneda, Yuki Higashiura, Niuka Toyama, Yoshiaki Nishiya (Grad. Sch. Sci. Eng., Setsunan Univ.)

16:54 2Ap07 Biosilica formation on polystyrene plate
…… ◯Tomoko Kurotaki, Kazunori Nakashima, Ryo Naota, Chikara Takano, Satoru Kawasaki (Grad. Sch. Eng., Hokkaido Univ.)

17:06 2Ap08 Development and application of a method for designing highly functional enzymes independent of protein stability
…… ◯Hiroki Ozawa, Ibuki Unno, Ryohei Sekine, Sohei Ito, Shogo Nakano (Grad. Sch. Integr. Pharm. Nutr. Sci., Univ. Shizuoka)

17:18 2Ap09 Enzymatic characterization of phenylalanine ammonia-lyase from *Citrus sinensis*.
…… ◯Yuri Nishikawa, Takao Ohashi (Grad. Sch. Sci. Eng., Setsunan Univ.)

17:30 2Ap10 Exploration and functional analysis of membrane curvature sensing protein from *Escherichia coli*
…… ◯Tanaka Masayoshi, Miyake Takahiro, Mina Okochi (Sch. Mater. Chem. Technol., Tokyo Tech)

Room B IB015 (15:30–17:42)

【Enzymology, Enzyme; Proteins】

15:30 2Bp01 Visualization of tyrosine hydroxylase reaction in mouse brain using mass microscope
…… ◯Naho Shinohara[1], Eiichiro Fukusaki[1,2,3], Shuichi Shimma[1,2,3] ([1] Grad. Sch. Eng., Osaka Univ., [2] Industrial Biotechnology Initiative Division, Institute for Open and Transdisciplinary Research Initiatives, Osaka Univ., [3] Osaka University Shimadzu Omics Innovation Research Laboratories)

15:42 2Bp02 Structural stabilization and thermostability by site-directed mutation of ambrain synthase
…… ◯Tomoha Yamazawa[1], Taichi Kameya[1], Tomomi Kubota[2], Kazuhiko Ishikawa[2,3], Dijiro Ueda[1], Tsutomu Sato[1] ([1] Grad. Sch. Sci. Technol., Niigata Univ., [2] AIST, [3] Matsutani Chemical Industry Co., Ltd.)

15:54 2Bp03 Construction of Evolutionary Engineering Systems for High Production of Ambrein
…… ◯Daijiro Ueda[1], Ryo Sato[1], Asuka Fujii[1], Yusuke Otani[2], Daisuke Umeno[3], Tsutomu Sato[1] ([1] Grad. Sch. Sci. Technol., Niigata Univ., [2] Grad. Sch. Eng., Chiba Univ., [3] Grad. Sch. Adv. Sci. Eng., Waseda Univ.)

16:06 2Bp04 Finding new compounds via a predicted data mining approach
……Jiumn-Yih Wu [1], Hsiou-Yuf Ding [2], Tzi-Yuan Wang [3], ○TeSheng Chang [4]
([1] Dept. Food Sci., National Quemoy University,
[2] Dept. Cosmet. Sci., Chia Nan University of Pharmacy and Science, [3] Biodiv. Res. Cen., Academia Sinica,
[4] Dep. Biol. Sci. Tech., National University of Tainan)

16:18 2Bp05 Analysis of properties and investigation of conditions for its crystallization of a novel terpene synthase from insects
……○Chinaru Hirai, Daijirou Ueda, Narumi Fujikawa, Tutomu Satou
(Grad. Sch. Sci. Technol., Niigata Univ.)

16:30 Break

16:42 2Bp06 Characterization of phosphatidate phosphatase from *Amycolatopsis* sp. NT-119
…… ○Daisuke Sugimori [1], Iwasaki Yugo [2] ([1] Fac. Symbio. Syst. Sci., Fukushima Univ.,
[2] Grad. Sch. Biosci. Biotechnol., Chubu Univ.)

16:54 2Bp07 Signal peptide-independent secretion of levansucrase of acetic acid bacteria
……○Riku Yamashita [1], Naoya Kataoka [1,2], Morio Ishikawa [3], Minenosuke Mathutani [4],
Uraiwan Tippayasak [5], Gunjana Theeragool [5], Kazunobu Matsushita [1,2], Toshiharu Yakushi [1,2]
([1] Grad. Sch. Sci. Tech. Innov., Yamaguchi Univ., [2] RCTMR, Yamaguchi Univ.,
[3] Fac. Appl. Biosci., Tokyo Univ. Ag.,, [4] NODAI Genome, Tokyo Univ. Ag., [5] Fac. Sci., Kasetsart Univ.)

17:06 2Bp08 Development of enzyme evolution method that enables deletion, substitution, and insertion of codons
……○Kotaro Tsuru [1], Kenji Okano [2], Hiroya Tomita [3], Kentaro Miyazaki [3], Kohsuke Honda [3,4]
([1] Grad. Sch. Eng., Osaka Univ., [2] Fac. Chem. Mater. Bioeng., Kansai Univ., [3] ICBiotech, Osaka Univ.,
[4] OTRI, Osaka Univ.)

17:18 2Bp09 Research on the mechanism of translation enhancement of peptide tags by using *E. coli* translation arrest.
…… ○Yuma Nishikawa, Riko Fujikawa, Hideo Nakano, Teruyo Kato
(Grad. Sch. Bioagric., Sci., Nagoya Univ.)

17:30 2Bp10 Co-expression of molecular chaperones improves receptor activities on magnetosome membrane
……○Ryoto Tomoe, Tsuyoshi Tanaka, Tomoko Yoshino (Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)

Room C IB014 (15:30–17:42)

【Proteins】

15:30 2Cp01 Modular displaying of dengue envelope protein domain III (EDIII) on SpyTagged-Norovirus-like particles
…… ○Jirayu Boonyakida, Enoch Y. Park (Res. Inst. Green Sci. Technol., Shizuoka Univ.)

15:42 2Cp02 Mechanical stability analysis of the trimeric adhesive protein AtaA by all-atom molecular dynamics simulation
……○Jun Sasahara [1], Shogo Yoshimoto [1], Kazushi Fujimoto [2], Katsutoshi Hori [1]
([1] Grad. Sch. Eng., Nagoya Univ., [2] Fac. Chem. Mater. Bioeng., Kansai Univ.)

15:54 2Cp03 Construction of nanopores using a transmembrane domain of the trimeric autotransporter adhesin
…… ○Taehyun Hwang [1], Shogo Yoshimoto [1], Jun Sasahara [1], Ryuji Kawano [2], Katsutoshi Hori [1]
([1] Grad. Sch. Eng., Nagoya Univ., [2] Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)

16:06 2Cp04 Engineering of protein nanopores for protein detection
…… ○Yuki Fujita [1], Yasukazu Maeda [1], Atsushi Ichiyanagi [1], Ryuji Kawano [2]
([1] Kikkoman Corp., [2] Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)

16:18 2Cp05 Rapid development of single fluorescent protein-based immunosensor Flashbody through ultra-high-throughput screening and cell-free protein synthesis

·····◯Bo Zhu [1], Zhirou Qiu [2], Keisuke Mizutani [3], Ken Kobayashi [3], Hiroshi Ueda [1], Tetsuya Kitaguchi [1]

([1] CLS, Tokyo Tech, [2] Sch. Life Sci. Technol, Tokyo Tech, [3] Sch. Eng., Tokyo Tech)

16:30 Break

16:42 2Cp06 Development of an immunosensor based on the inhibition of antigen-antibody reactions by antibody-binding proteins.

····· ◯Ayumu Ninomiya [1], Cheng Qian [1], Takanobu Yasuda [2], Bo Shu [2], Hiroshi Ueda [2], Tetsuya Kitaguchi [2]

([1] Sch. Life Sci. Technol, Tokyo Tech, [2] Lab. for Chem. and Life Sci. Inst. of Innobative Res, Tokyo Tech)

16:54 2Cp07 Lanthanide sensors using periplasmic display technology

····· ◯Kotoha Tanaka, Takahiro Seki, Daisuke Umeno (Grad. Sch. Adv. Sci. Eng., Waseda Univ.)

17:06 2Cp08 Periplasm Display System for Screening of Novel Emzyme Properties

····· ◯Takahiro Seki [1], Kotoha Tanaka [2], Yuki Kimura [2], Daisuke Umeno [1,2]

([1] Waseda Res. Inst. Sci. Eng., [2] Sch. Adv. Sci. Eng., Waseda Univ.)

17:18 2Cp09 Development of the odor detection system using mammalian olfactory receptors and the graphene sensor.

·····◯Ikumi Takayama, Yosuke Fukutani, Tomoya Yoshii, Takashi Ikuta, Kenzo Maehashi, Masafumi Yohda

(Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)

17:30 2Cp10 Imparting arsenic responsiveness to the Colin response protein

·····Ryo Yamaguchi [1], Tetsuaki Yamamoto [2], Daisuke Umeno [3], Katsumasa Kamiya [4], ◯Shigeko Kawai-Noma [5]

([1] Grad. Sch. Sci. Eng., Chiba Univ., [2] Eng., Chiba Univ., [3] Sch. Adv. Sci. Eng., Waseda Univ., [4] Fac. Eng., Kanagawa Inst. Technol., [5] Grad. Sch. Eng., Chiba Univ.)

Room D IB013 (15:30–17:42)

【Cell and Tissue Engineering; Biomedical Engineering】

15:30 2Dp01 Data augmentation technology for morphology-based prediction model of mesenchymal stem cells

·····◯Kazue Kimura [1], Kenjiro Tanaka [1], Kei Kanie [2], Ryuji Kato [1,3]

([1] Grad. Sch. Pharm. Sci., Nagoya Univ., [2] Fac.Eng,. Kinki Univ., [3] Institute of Nano-life-Systems., Nagoya Univ.)

15:42 2Dp02 Validation of a pipeline for morphology-based suspension cell evaluation

·····◯Takumi Hisada [1], Kei Kanie [2], Kenjiro Tanaka [1], Ryuji Kato [1,3]

([1] Grad. Sch. Pharm. Sci., Nagoya Univ., [2] Kindai Univ. Faculty of Engineering, [3] Inst. Nano-Life-Systems, Nagoya Univ.)

15:54 2Dp03 Demonstrating the potential of ambient intelligence for cell culture

·····◯Kengo Momose [1], Takeru Shiina [1], Kenjiro Tanaka [1], Yuto Takemoto [1], Kei Kanie [2], Ryuji Kato [1,3]

([1] Grad. Sch. Pharm. Sci., Nagoya Univ., [2] Kindai University Faculty of Engineering, [3] Inst. of Nano-Life-Systems, Nagoya Univ.)

16:06 2Dp04 Deep learning of cancer stem cell recognized by an artificial intelligence.

·····◯Tomoyasu Sugiyama [1], Zaijun Zhang [1], Hiroaki Ishihata [3], Ryuto Maruyama [1], Tomonari Kasai [2], Hiroyuki Kameda [3]

([1] Sch. Biosci. Biotechnol., Tokyo Univ. Technol., [2] NTRC, Okayama University, [3] Sch. Computer Sci., Tokyo Univ. Technol.)

16:18 2Dp05 Development of a cell function evaluation system using deep learning video recognition technology
····· ○Makoto Masuhara, Sho Kataoka, Rie Sonoi, Yoshinori Kawabe, Masamichi Kamihira
(Grad. Sch. Eng., Kyushu Univ.)

16:30 Break

16:42 2Dp06 Restraining of cell death and effects on antibody production in suspension culture of CHO cells by nanofibrillated bacterial cellulose
····· ○Eiichiro Kaneko [1], Haruto Tsujisaki [1], Masashi Fujiwara [2], Hidenori Ando [3], Tatsuhiro Ishida [3], Hirohumi Tani [2], Kenji Tajima [2]
([1] Grad. Sch. Chem. Sci. Eng., Hokkaido Univ., [2] Fact. Eng., Hokkaido Univ., [3] Fact. Pharm. Sci., Tokushima Univ.)

16:54 2Dp07 Enhancing bioprocess for recombinant antibody production using perfusion culture
····· ○Muneyoshi Okamoto [1], Hiroaki Kto [2], Keisuke Shibuya [3], Masayoshi Onitsuka [4]
([1] Grad. Sch. Sci. Technol. Innov., Tokushima Univ., [2] Res. Dev. Dept. Innov. Div., Hitachi Plant Services Co., Ltd., [3] Res. Dev., Hitachi, Ltd., [4] Grad. Sch. Biosci. Bioind, Tokushima Univ.)

17:06 2Dp08 Expression and molecular characterization of bispecific scFv antibodies in CHO cells
····· ○Nanako Fukuma [1], Yamato Okita [1], Hiroe Amou [2], Yoichiro Ito [3], Jun Ishii [3], Akihiko Kondo [4], Mitsuo Umetsu [5], Masayoshi Onitsuka [2]
([1] Grad. Sch. Sci. Technol. Innov., Tokushima Univ., [2] Grad. Sch. Biosci. Bioind, Tokushima Univ., [3] EGBRC, Kobe Univ.,, [4] Grad. Sch. Sci. Technol. Innov., Kobe Univ., [5] Grad. Sch. Eng., Tohoku Univ.)

17:18 2Dp09 Chicken primordial germ cells producing scFv-Fc protein
····· Ryutaro Tsujii, Yuya Okuzaki, ○Ken-ichi Nishijima (Grad. Sch. Bioagric., Sci., Nagoya Univ.)

17:30 2Dp10 Production of adeno-associated virus (AAV) vectors using suspended HEK293
····· ○Kazuki Suna [1], Masaharu Maeda [2], Guirong Kanai [1,2], Noriko Yamano-adachi [1,2], Takeshi Omasa [1,2]
([1] Grad. Sch. Eng., Osaka Univ., [2] MAB)

Room E ES Hall (15:30–17:06)

【Plant Cell / Tissue Engineering】

15:30 2Ep01 Analysis of regulation mechanism for C_1 toxicity and C_1 metabolism in the hyper formaldehyde-tolerant bacterium *Methylobacterium* sp. FD1
····· ○Shinya Ishihara (United Grad. Sch. Agric. Sci., Gifu Univ.)

15:42 2Ep02 The effects of soil bacteria on endophytic bacteria in roots
····· ○Takumi Sasaki, Thinh Tran, Motoki Kubo (Grad. Sch. Life Sci., Ritsumeikan Univ.)

15:54 2Ep03 Analysis of rhizobial infection-specific gene expression at the single-cell level in soybean root hairs
····· ○Qianya Su [1], Hiroko Matsunaga [2], Ashok Z. Samuel [2], Misato Okudaira [2], Hidefumi Hamasaki [5], Minami Matsui [6], Haruko Takeyama [1,2,3,4]
([1] Grad. Sch. Adv. Sci. Eng., Waseda Univ., [2] Res. Org. Nano Life Innov., Waseda Univ., [3] CBBD-OIL, AIST-Waseda Univ., [4] Inst. Adv. Res. Biosyst. Dynam., Waseda Res. Inst. Sci. Eng., Waseda Univ., [5] CSRS, RIKENS, [6] Kihara Inst. Biol. Res., Yokohama City Univ.)

16:06 2Ep04 The effect of additives on recombinant protein production in plant suspension cultured cells
····· ○Hiroyuki Kajiura, Nanami Sekino, Ryo Misaki, Kazuhito Fujiyama (ICBiotech, Osaka Univ.)

16:18 2Ep05 Foreign DNA detection in genome-edited potatoes by *k*-mer method
····· ○Shuhei Yasumoto [1,2], Toshiya Muranaka [1,2] ([1] Grad. Sch. Eng., Osaka Univ., [2] OTRI, Osaka Univ.)

16:30 Break

16:42 2Ep06 Isolation of lateral root-inducing compounds from the endophytic fungus
……◯Hirotaka Matsuura, Takumi Ogawa, Atsushi Okazawa, Daisaku Ohta
(Grad. Sch. Agric., Osaka Met. Univ.)

16:54 2Ep07 Varietal registration of super high-yielding isogenic Koshihikari combining genes for biomass, tillering and large grain
……◯Motonori Tomita (Res. Inst. Green Sci. Technol., Shizuoka Univ.)

Room F ES021 (15:30–17:30)

【Brewing, Brewing Technology】

15:30 2Fp01 Optimization of beer brewing method with SAKE yeast developed in FUKUSHIMA prefecture
……◯Natsuko Nakajima, Takanori Saito
(Industrial Technology Institute Fukushima Prefectural Government)

15:42 2Fp02 Characteristics of the *EHL* gene disruptant in sake yeast
……◯Kazuko Tomonaga, Kouta Watanabe, Toshimori Kadokura, Shunichi Nakayama
(Fac. Appl. Biosci., Tokyo Univ. Agric.)

15:54 2Fp03 Application of ultra-high pressure homogenization to pasteurization process of sake production
……◯Gen-ya Arakawa, Ken-ji Yokoi (Toyama Pref. Food Res. Inst.)

16:06 2Fp04 The effect of Lignin to the growth and morphology of *Aspergillus oryzae*.
……◯Takumi Tanaka[1], Liyun Liu[1], Kanae Sakai[1], Hideyuki Yamashita[2], Sharon Marie Bahena Garrido[3], Kazuhiro Iwashita[3], Ken-ichi Kusumoto[1]
([1] Grad. Sch. Eng., Osaka Univ., [2] Higuchi Matsunosuke Shoten Co., Ltd., [3] NRIB)

16:18 2Fp05 The effect of low SAM accumulation on low hineka odor in sake brewed with a non-Kyokai yeast
……◯Yusuke Shibata[1], Tasuku Yamada[1], Yuriko Ikeda[2], Muneyoshi Kanai[2], Tsutomu Fujii[3], Takeshi Akao[2], Tetsuya Goshima[2], Atsuko Isogai[2], Toshinari Takahashi[1]
([1] Kiku-Masamune Sake Brewing Co., Ltd., [2] NRIB, [3] Fukushima Univ.)

16:30 Break

16:42 2Fp06 Estimation of cell density using cell diameter and optical density
……◯Nobuo Fukuda (Biomed. Res. Inst., AIST)

16:54 2Fp07 Identification of an operon and its regulator required for autoaggregation in *Tetragenococcus halophilus*
……Ryuhei Endo[1], ◯Shiori Hotta[2], Takura Wakinaka[3], Yoshinobu Mogi[3], Jun Watanabe[1,2,3,4]
([1] Grad. Sch. Food and Agric. Sci. Fukushima Univ., [2] Fac. Food and Agric. Sci. Fukushima Univ., [3] Yamasa Corp., [4] Inst. Ferment. Sci. Fac. Food and Agric. Sci. Fukushima Univ.)

17:06 2Fp08 Isolation of arginine deiminase mutants with arginine analogue canavanine.
……◯Takura Wakinaka[1], Jun Watanabe[1,2], Yoshinobu Mogi[1] ([1] Yamasa Corp., [2] Fac. Food and Agric. Sci. Fukushima Univ.)

17:18 2Fp09 Application of a low acetate-producing lactic acid bacterium to soy sauce fermentation starter.
……◯Keita Higuchi[1], Yuya Nukagawa[2], Takura Wakinaka[1], Jun Watanabe[1,2], Yoshinobu Mogi[1]
([1] Yamasa Corp., [2] Fac. Food and Agric. Sci. Fukushima Univ.)

Room G ES022 (15:30–17:30)

【Food Science, Food Technology】

15:30 2Gp01 Biosynthesis mechanism of multiple bacteriocins produced by *Lactiplantibacillus plantarum* PUK6

····· ○Akari Matsuda [1], Ayaka Honda [2], Ai Kawahara [2], Takeshi Zendo [3], Hiromi Matsusaki [1,2]
([1] Grad. Sch., Environ. Sym. Sci., Pref. Univ. Kumamoto, [2] Fac. Environ. Sym. Sci., Pref. Univ. Kumamoto, [3] Grad. Sch. Agric., Kyushu Univ.)

15:42 2Gp02 Purification and characterization of the bacteriocin produced by *Lactococcus lactis* PJR24 isolated from pickled Japanese radish.

·····○Hinako Nagata [1], Takeshi Zendo [2], Hiromi Matsusaki [1,3]
([1] Grad. Sch. Environ. Sym. Sci., Pref. Univ. Kumamoto, [2] Grad. Sch. Agric., Kyushu Univ., [3] Fac. Environ. Sym. Sci., Pref. Univ. Kumamoto)

15:54 2Gp03 Screening and characterization of novel bacteriocins from lactic acid bacteria

·····○Riona Tanaka, Rikuta Shono, Taisei Nomiyama, Jiro Nakayama, Takeshi Zendo
(Grad. Sch. Agric., Kyushu Univ.)

16:06 2Gp04 Investigation of the effect of medium composition for a in vitro human colonic fermentation model on reproducibility of its microbiota structure

····· Daisuke Sasaki [1], Yasushi Matsuki [2], ○Kentaro Inokuma [1], Tomoya Shintani [1], Akihiko Kondo [1]
([1] Grad. Sch. Sci. Technol. Innov., Kobe Univ., [2] SPO, Kobe Univ.)

16:18 2Gp05 Validation of culture accuracy of a high-throughput in vitro human colonic fermentation model

····· Daisuke Sasaki [1], Yasushi Matsuki [2], ○Tomoya Shintani [1], Kentaro Inokuma [1], Akihiko Kondo [1]
([1] Grad. Sch. Sci. Technol. Innov., Kobe Univ., [2] SPO, Kobe Univ.)

16:30 Break

16:42 2Gp06 Comprehensive metabolomics-based evaluation to improve tempe functional quality

·····○Sastia Prama Putri [1,2], Marvin Nathanael Iman [1], Rafidha Irdiani [1], Della Rahmawati [1,4], Made Astawan [5], Eiichiro Fukusaki [1,2,3]
([1] Grad. Sch. Eng., Osaka Univ., [2] OTRI, Osaka Univ., [3] Shimadzu Omics Innov. Res. Lab, Osaka Univ, Japan, [4] Dept. Food. Sci. Tech., Swiss German Univ. Indonesia, [5] Dept. Food. Sci. Tech., IPB Univ, Indonesia)

16:54 2Gp07 Sensory Evaluation and Metabolomics Approach to Reveal the Characteristics of Kopyor, Indonesian Unique Coconut

····· ○Yunindanova Mercy Bientri [1], Sastia Prama Putri [1,2], Hengky Novarianto [4], Eiichiro Fukusaki [1,2,3]
([1] Grad. Sch. Eng., Osaka Univ., [2] OTRI, Osaka Univ., [3] Shimadzu Omics Innov. Res. Lab., Osaka Univ, [4] BRIN, Indonesia)

17:06 2Gp08 Comparison of emulsifiability among the fermented foods derived from rice and development of a novel emulsified food "rice mayonnaise" made from the rice-derived materials

····· ○Kazuya Kobayashi [1], Hiroaki Okuhara [1], Tomoyuki Haneda [2], Miyuu Tanaka [2]
([1] Niigata Pref. Agric. Res. Inst. Food Res. Center, [2] Yamazaki-Jyouzou Co., Ltd.)

17:18 2Gp09 Effect of amazake administration on the intestinal environment

·····○Sorato Iwai, Ryo Nomura, Takaaki Kojima, Motoyuki Shimizu, Masashi Kato
(Grad. Sch. Agric., Meijo Univ.)

Room H ES024 (15:30–17:30)

【Fermentation Physiology, Fermentation Technology; Metabolic Engineering】

15:30 2Hp01 (Withdrawn)

15:42 2Hp02 Characterization of *Corynebacterium glutamicum* mutants defective in biosynthesis of mycolic acids
····· ○Ai Sunouchi, Noritaka Iwai, Masaaki Wachi (Sch. Life Sci. Technol, Tokyo Tech)

15:54 2Hp03 Behavior of proteins by Mg in the chitin-degrading bacterium *Cellulosimicrobium* sp. NTK2
····· ○Reiji Mizoshiri [1], Hiroki Masue [1], Daisuke Niki [2], Jiro Arima [3]
([1] United Grad. Sch. Sustainability Sci., Tottori Univ., [2] United Grad. Sch. Agric. Sci., Tottori Univ., [3] Fac. Agric., Tottori Univ.)

16:06 2Hp04 Function of Cyclic Bis(3'-5') diadenylic Acid in *Lactococcus lactis*
····· ○Tatsuki Kai, Mika Matsubara, Akiko Nishimura, Hidenori Kaneoka, Shinzi Iizima (Fac. Eng., Aichi Inst. Technol.)

16:18 2Hp05 Involvement of arginine decarboxylase gene 1 (*adc1*) in agmatine synthesis in koji
····· ○Yui Murakami [1,2], Soichiro Ikuta [1,2], Wakao Fukuda [1,2], Jun-ichi Maruyama [3,4], Shinsuke Fujiwara [1,2]
([1] Grad. Sch. Sci. Technol., Kwansei Gakuin Univ., [2] Sch. Biological Environmental Sci., Kwansei Gakuin Univ., [3] Grad. Sch. Agric. Life Sci., Univ. Tokyo, [4] CRIIM, The Univ. of Tokyo)

16:30 Break

16:42 2Hp06 Cell surface proteins are related to xylan-mediated aggregation in *Companilactobacillus alimentarius* KH4
····· ○Mayu Yamamoto [1], Takanori Yano [2], Ryoji Mitsui [2,3]
([1] Grad. Sch. Sci., Okayama Univ. Sci., [2] Fac. Sci., Okayama Univ. Sci., [3] Fac. Life Sci., Okayama Univ. Sci.)

16:54 2Hp07 Two homologs of threonine synthase from a thermophilic hydrogen-oxidizing bacterium, *Hydrogenobacter thermophilus*
····· ○Masafumi Kameya [1,2], Hiroyuki Arai [1,2], Masaharu Ishii [1,2]
([1] Grad. Sch. Agric. Life Sci., Univ. Tokyo, [2] CRIIM, Univ. Tokyo)

17:06 2Hp08 Identification and characterization of a novel inducible enzyme, ellagic acid lactonase, in *Gordonibacter urolithinfaciens* DSM 27213
····· ○Anno Katasho [1], Hiroko Watanabe [1], Masatake Kudoh [2], Takanori Nakajima [2], Hiroaki Yamamoto [2], Jun Ogawa [1], Shigenobu Kishino [1]
([1] Grad. Sch. Agric., Kyoto Univ., [2] Daicel Corp. Corporate Research Center)

17:18 2Hp09 Study on red proteins accumulated in the culture medium of *Halomonas* sp. KM-1
····· ○Taito Tsukimata [1], Akinori Ando [1], Mikio Kojima [1], Shohei Katsuya [2], Jun Tsubota [2], Jun Ogawa [1]
([1] Grad. Sch. Agric., Kyoto Univ., [2] Osaka Gas Co., Ltd.)

Room I ES025 (15:30–17:30)

【Fermentation Physiology, Fermentation Technology; Metabolic Engineering】

15:30 2Ip01 Characterization of novel naturally occurring sophorolipid glycerides produced by *Starmerella bombicola*
····· ○Yosuke Kobayashi [1], Qiushi Li [1], Kazunori Ushimaru [2], Makoto Hirota [1], Tomotake Morita [2], Tokuma Fukuoka [2]
([1] Allied Carbon Solutions Co., Ltd., [2] RISC, AIST)

15:42 2Ip02 Optimization for production of odd-chain fatty acids in the methylotrophic yeast *Komagataella phaffii* GS115
····· ○Junzhang Zhu [1], Yoshihumi Hikida [2], Haoliang Cai [1], Masaya Shimada [1,2], Hiroshi Kikukawa [3], Tomoyuki Nakagawa [1,2]
([1] United Grad. Sch. Agric. Sci., Gifu Univ., [2] Fac. Appl. Biol. Sci., Gifu Univ., [3] Fac. Eng. Shizuoka Univ.)

15:54 2Ip03 Analysis of changes in the metabolic state of the oleaginous yeast *Lipomyces starkeyi* before and after the start of lipid production.

····· ○Takafumi Iwakura [1], Taisuke Seike [1], Nobuyuki Okahashi [1], Hiroaki Tkakau [2], Fumio Matsuda [1]
([1] Grad. Sch. IST, Osaka Univ., [2] Fac. Appl. Life Sci., Niigata Univ. Pharm. Appl. Life Sci.)

16:06 2Ip04 Identification and effect of lipid production-related factor Snf1p on lipid biosynthesis pathway in oleaginous yeast *Lipomyces starkeyi*

····· ○Rikako Sato [1], Ryo Watabe [1], Yuuya Fujii [1], Yosuke Shida [2], Wataru Ogasawara [2], Koji Ishiya [3], Sachiyo Aburatani [3], Satoshi Ara [1], Harutake Yamazaki [1], Hiroaki Takaku [1]
([1] Fac. Appl. Life Sci., Niigata Univ. Pharm. Appl. Life Sci., [2] Nagaoka Univ. Technol., [3] BPRI, AIST)

16:18 2Ip05 Improvement of lipid productivity with enhancement of malonyl-CoA biosynthesis pathway in oleaginous yeast *Lipomyces starkeyi*

····· ○Shogo Kono [1], Rikako Sato [1], Satoshi Ara [1,2], Tomokazu Shirai [3], Yuki Soma [4], Masatomo Takahashi [5], Yoshihiro Izumi [5], Takeshi Bamba [5], Koji Ishiya [6], Sachiyo Aburatani [6], Hideo Araki [2], Harutake Yamazaki [1], Hiroaki Takaku [1]
([1] Fac. Appl. Life Sci., Niigata Univ. Pharm. Appl. Life Sci., [2] Fuji Oil Co., Ltd., [3] CSRS, RIKEN, [4] Grad. Sch. Agric., Kyushu Univ., [5] Med. Inst. Bioreg., Kyushu Univ., [6] BPRI, AIST)

16:30 Break

16:42 2Ip06 Involvement of C-terminal region of lipid synthesis regulatory factor LsSpt23p in lipid accumulation in the oleaginous yeast *Lipomyces starkeyi*

····· ○Yuuta Higuchi [1], Rikako Sato [1], Satoshi Ara [1], Koji Ishiya [2], Sachiyo Aburatani [2], Harutake Yamazaki [1], Hiroaki Takaku [1]
([1] Fac. Appl. Life Sci., Niigata Univ. Pharm. Appl. Life Sci., [2] BPRI, AIST)

16:54 2Ip07 Involvement of beta-oxidation pathway in lipid accumulation in the oleaginous yeast *Lipomyces starkeyi*

····○Satsuki Chino [1], Rikako Sato [1], Satoshi Ara [1,2], Hideo Araki [2], Harutake Yamazaki [1], Hiroaki Takaku [1]
([1] Fac. Appl. Life Sci., Niigata Univ. Pharm. Appl. Life Sci., [2] Fuji Oil Co., Ltd.)

17:06 2Ip08 Cocoa butter-like lipid production by genetic engineering of fatty acyl desaturase and elongase genes in the oleaginous yeast *Lipomyces starkeyi*

····○Ryo Watabe [1], Rikako Sato [1], Satoshi Ara [1,2], Hideo Araki [2], Harutake Yamazaki [1], Hiroaki Takaku [1]
([1] Fac. Appl. Life Sci., Niigata Univ. Pharm. Appl. Life Sci., [2] Fuji Oil Co., Ltd.)

17:18 2Ip09 Highly efficient CRISPR/Cas9-mediated homologous recombination in the oleaginous yeast *Lipomyces starkeyi*

····○Kaito Maruyama [1], Rikako Sato [1], Satoshi Ara [1,2], Hideo Araki [2], Koji Ishiya [3], Sachiyo Aburatani [3], Harutake Yamazaki [1], Hiroaki Takaku [1]
([1] Fac. Appl. Life Sci., Niigata Univ. Pharm. Appl. Life Sci., [2] Fuji Oil Co., Ltd., [3] BPRI, AIST)

Room K Okuma Lecture Room 2F (15:30–17:42)

【Genetic Engineering; Taxonomy, Phylogenetics】

15:30 2Kp01 Study on facilitating methods of outer membrane vesicles production in *Escherichia coli*

····· ○Yoshihiro Ojima, Yuki Kumazoe, Masayuki Azuma (Grad. Sch. Eng., Osaka Metro. Univ.)

15:42 2Kp02 Cell surface structures in hypervesiculating *Escherichia coli* strain *rodZ* mutant

····· ○Kaho Toda [1], Yoshihiro Ojima [1], Yuhei Tahara [2], Makoto Miyata [2], Masayuki Azuma [1]
([1] Grad. Sch. Eng., Osaka Metro. Univ., [2] Grad. Sch. Sci., Osaka Metro. Univ.)

15:54 2Kp03 Relationship between membrane vesicle production and biofilm lifecycle in *Pseudomonas aeruginosa*

····· ○Mizuki Kanno [1], Yosuke Tashiro [1,2] ([1] Grad. Sch. Sci. Technol. Shizuoka Univ., [2] Grad. Sch. Integr. Sci. Technol., Shizuoka Univ.)

16:06 2Kp04 Functional analysis of genes involved in replication and horizontal gene transfer of thermophilic filamentous phage

……○Tomomi Yoshida, Miku Nagaoka, Haruka Soejima, Yasuhiro Fujino, Kastumi Doi
(Grad. Sch. Bioresour. Bioenviron. Sci., Kyushu Univ.)

16:18 2Kp05 *N*-acylhomoserine lactone-degrading activity of nonpathogenic *Rhizobium vitis* and its application for biocontrol agent

……○Koki Hirose [1], Tomohiro Morohoshi [1], Nobutaka Someya [2] ([1] Fac. Eng., Utsunomiya Univ., [2] NARO)

16:30 Break

16:42 2Kp06 Development of a highly sensitive bacterial single-cell RNA-seq method to identify transcriptional heterogeneity in bacterial populations

……○Mika Nishimura [1], Haruko Takeyama [1,2,3,4], Masahito Hosokawa [1,2,3,4]
([1] Grad. Sch. Adv. Sci. Eng., Waseda Univ., [2] Res. Org. Nano Life Innov., Waseda Univ.,
[3] CBBD-OIL, AIST-Waseda Univ.,
[4] Inst. Adv. Res. Biosyst. Dynam., Waseda Res. Inst. Sci. Eng., Waseda Univ.)

16:54 2Kp07 Development of specific bacterial labeling tools using phage-derived molecules acquired from uncultured oral bacterial genomes

……○Naoya Iwai [1], Haruko Takeyama [1,2,3,4], Masahito Hosokawa [1,2,3,4]
([1] Grad. Sch. Adv. Sci. Eng., Waseda Univ., [2] Res. Org. Nano Life Innov., Waseda Univ.,
[3] CBBD-OIL, AIST-Waseda Univ.,
[4] Inst. Adv. Res. Biosyst. Dynam., Waseda Res. Inst. Sci. Eng., Waseda Univ.)

17:06 2Kp08 Establishment of a selective recovery system for bifidobacteria from the gut microbiota

…… ○Seiya Miyashita, Kako Yoshida, Mina Shimada, Tomoya Maeda, Atsushi Yokota, Satoru Fukiya
(Grad. Sch. Agric., Hokkaido Univ.)

17:18 2Kp09 Construction of large-sized DNA using *Bacillus subtilis*

…… ○Shinya Kaneko [1], Yasunori Aizawa [1,2] ([1] Sch. Life Sci. Technol, Tokyo Tech, [2] KISTEC)

17:30 2Kp10 Genetic engineering of a non-competent bacterium toward synthetic biology applications

…… ○Ishikawa Masahito [1,2], Katsutoshi Hori [3] ([1] Dept. Biosci., Nagahama Inst. Bio-Sci. Technol.,
[2] PRESTO, JST, [3] Grad. Sch. Eng., Nagoya Univ.)

Room L 121 (Engineering Building #1) (15:30–17:42)

【Biochemical Engineering; Cell Culture Engineering; Bioprocess Engineering】

15:30 2Lp01 Examination of method for collecting skin resident bacteria and culture characteristics of isolated microorganisms

……○Naohiko Taga, Yuuto Fukuda (Sch. Agric., Tokai Univ.)

15:42 2Lp02 Exploration and characterization of gut bacteria involved in growth promotion of beetle larvae.

……○Yusuke Yatsushiro, Huto Asano, Hiroaki Kodama (Grad. Sch. Horticul., Chiba Univ.)

15:54 2Lp03 Analysis of the characteristics of *Horornis diphone* feces and their effect on the growth of indigenous skin bacteria

……○Manami Saito [1], Hideki Aoyagi [1,2]
([1] Grad. Sch. Deg. P. Agro-Bioresour. Sci. Technol., Univ. Tsukuba, [2] Inst. Life Environ. Sci., Univ. Tsukuba)

16:06 2Lp04 Cultivation and analysis of bacterial community structure present in wooden barrels used in soy sauce brewing

……Daisuke Matsuzaki [1], ○Karin Miki [1], Hideki Aoyagi [1,2]
([1] Grad. Sch. Deg. P. Agro-Bioresour. Sci. Technol., Univ. Tsukuba, [2] Inst. Life Environ. Sci., Univ. Tsukuba)

16:18 2Lp05 Effect of food additives on the model microbiota system of intestinal bacteria (part 3)
Tsumugi Ashizawa [1], ○Hiroto Suzuki [2], Reika Momoi [2], Hideki Aoyagi [1,2,3]
([1] Grad. Sch. Deg. P. Agro-Bioresour. Sci. Technol., Univ. Tsukuba, [2] Coll. Agro-Biological Resour. Sci., Univ. Tsukuba, [3] Inst. Life Environ. Sci., Univ. Tsukuba)

16:30 Break

16:42 2Lp06 Subtractive modification of microbiota using bacteriophages
○Kenji Okano, Tomoki Tanaka, Hiroaki Iwaki (Fac. Chem. Mater. Bioeng., Kansai Univ.)

16:54 2Lp07 Enhancing gene expression in *Chlamydomonas reinhardtii* using CRISPR-transcriptional activation system
○Kokoro Miyazoe, Yoshinori Kawabe, Masamichi Kamihira (Grad. Sch. Eng., Kyushu Univ.)

17:06 2Lp08 Development of evaluation, selection, and acquisition methods for probiotics resistant to human gastrointestinal stress (Part 2)
○Takuma Kozawa [1], Ayumi Kozu [1], Hideki Aoyagi [1,2]
([1] Grad. Sch. Deg. P. Agro-Bioresour. Sci. Technol., Univ. Tsukuba, [2] Inst. Life Environ. Sci., Univ. Tsukuba)

17:18 2Lp09 Development of *Bacillus subtilis* technology for antibody fragments production
○Takuto Tojo, Hiroki Nishiguchi, Hidetoshi Inoue, Mayumi Wada, Tomoyuki Oura, Yuichi Tsuboi, Akihito Kawahara, Shingo Koyama, Yasushi Kageyama, Yasushi Takimura
(Kao Corp.)

17:30 2Lp10 Effective production of shingle chain variable fragment using recombinant *Escherichia coli* by high cell density culture
○Daisuke Yamaguchi, Yoichi Kumada, Jun-ichi Horiuchi
(Grad. Sch. Sci. Technol., Kyoto Inst. Technol.)

Room M 131 (Engineering Building #1) (15:30–17:42)

【Biochemical Engineering; Cell Culture Engineering】

15:30 2Mp01 Control of bioprocess with Complex Microbial Engineering: Elucidation of effect of pH on microbial community structure and their organic acid productivity in continuous meta-fermentation.
○Tomonori Koga [1], Hirokuni Miyamoto [2,3,4], Kenji Sakai [1], Mugihito Oshiro [1], Yukihiro Tashiro [1]
([1] Grad. Sch. Bioresour. Bioenviron. Sci., Kyushu Univ., [2] Fac. Horticul., Chiba Univ., [3] IMS,RIKEN, [4] Sermas co., ltd)

15:42 2Mp02 Analysis of interaction between butyric acid-producing bacteria and model intestinal epithelial cells using a novel co-culture system
○Yoshihiro Umehara [1], Hideki Aoyagi [1,2]
([1] Grad. Sch. Deg. P. Life Agric. Sci. Technol., Univ. Tsukuba, [2] Inst. Life Environ. Sci., Univ. Tsukuba)

15:54 2Mp03 Construction of a method for culturalization and isolation of uncultured bacteria using gel-micro droplet (GMD) aggregate culture method.
○Yumi Shimomura, Akina Yamamoto, Rikuta Suzuki, Setsu Kato, Yutaka Nakashimada, Yoshiteru Aoi
(Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)

16:06 2Mp04 Development of novel light-irradiated culture without direct illumination of culture medium
○Ginji Tsukada [1], Yuta Ishii [1], Hideki Aoyagi [1,2]
([1] Grad. Sch. Deg. P. Agro-Bioresour. Sci. Technol., Univ. Tsukuba, [2] Inst. Life Environ. Sci., Univ. Tsukuba)

16:18 2Mp05 Development of the novel methodology for fermentation medium screening using deep neural network
○Kazuki Watanabe [1], Tai-Ying Chiou [2], Masaaki Konishi [2] ([1] Kitami Inst. Tech., Grad. Sch. Eng., [2] Kitami Inst. Technol.)

16:30 Break

16:42 2Mp06 A new strategy for designing chemically defined media using comprehensive quantitative analysis of yeast extract and tryptone

……◯Takuto Nakajima [1], Tai-Ying Chiou [2], Masaaki Konishi [2] ([1] Kitami Inst. Tech., Grad. Sch. Eng., [2] Kitami Inst. Technol.)

16:54 2Mp07 Improving microbial media by machine learning and multiple instrumental analysis

……◯Masaaki Konishi (Kitami Inst. Technol.)

17:06 2Mp08 Thin-film ratiometric fluorescent pH sensors for use in animal cell cultivation

……◯Sumihiro Koyama, Mio Kamiya, Hayato Kikuchi, Takashi Aoki, Shutaro Ishikawa (ABLE Co. Ltd.)

17:18 2Mp09 Photoresponsive cell-trapping and photodegradable hydrogel layers for image-based single-cell sorting and analysis

……◯Xueyang Li, Satoshi Yamaguchi, Akimitsu Okamoto (Grad. Sch. Eng., Univ. Tokyo)

17:30 2Mp10 Evaluation of the effect of operating temperature on cell adhesion behavior for mechanization of the inoculation process

……◯Norihiko Hata [1,3,4], Atsushi Takano [1,3,4], Kenichi Harimoto [2,3,4], Kai Torng Ang [3], Fushun Miyamoto [3], Masahiro Kino-oka [3,4]
([1] RORZE Lifescience Inc., [2] RORZE CORPORATION, [3] Grad. Sch. Eng., Osaka Univ., [4] Res. Base for Cell Manufacturability, Grad. Sch. Eng., Osaka Univ.)

Room N 132 (Engineering Building #1) (15:30–17:42)

【Bioremediation; Environmental Technology, Wastewater Treatment; Biomass, Bioresource and Energy Engineering】

15:30 2Np01 Recovery of microplastics using mussel adhesive protein with controllable adhesive property

……◯Kazunori Nakashima, Anju Pilakka Veedu, Takahiro Sato, Chikara Takano, Satoru Kawasaki (Grad. Sch. Eng., Hokkaido Univ.)

15:42 2Np02 Development of a new surface display system on *Chlamydomonas reinhardtii* for PET degradation

……◯Shen-Long Tsai (National Taiwan University of Science and Technology)

15:54 2Np03 Hydrostatic dependent microbial community structures in biodegradation test under deep-sea mimic conditions

……◯Satoshi Wakai [1], Misato Tsukatani [1], Noriyuki Isobe [1], Hidetaka Nomaki [1], Mohhammad Asif Ali [2], Tatsuo Kaneko [2]
([1] JAMSTEC, [2] Sch. Mater. Sci., JAIST)

16:06 2Np04 Effects of LAHB degradation in the water environment on bacterial communities

……◯Ryosuke Kadoya [1], Hitomi Soga [1], Miki Matsuda [1], Michio Sato [2], Seiichi Taguchi [3]
([1] Sch. Life Studies, Sugiyama Jogakuen Univ., [2] Sch. Agric., Meiji Univ., [3] Grad. Sch. Sci. Technol. Innov., Kobe Univ.)

16:18 2Np05 Isolation and characterization of polymer-degrading microorganisms by using high-throughput screening method.

……◯Tomoaki Kouya, Kenta Shimada, Haruka Taya, Kei Nishii (Oyama Natl. Coll. Technol.)

16:30 Break

16:42 2Np06 Degradation of PHB film in soil under low temperature environment by *Ralstonia* sp. C16

……◯Takumi Terayama, Young Cheol Chang (Div. Sustain. Environ. Eng., Muroran Inst. Technol.)

16:54 2Np07 Acceleration of degradation of polybutylene adipate-*co*-terephthalate PBAT containing biodegradable plastic agricultural mulch film spread on field by esterase from the yeast *Pseudozyma antarctica* PaE

····· ○Hiroko Kitamoto [1], Motoo Koitabashi [1], Yuka Yamashita [1], Hirokazu Ueda [1], Akihiko Takeuchi [1], Takashi Watanabe [1], Shun Sato [2], Azusa Saika [2], Tokuma Fukuoka [2]
([1] NIAES, [2] AIST)

17:06 2Np08 Production of thermostalble PETase by *Aspergillus oryzae*

····· ○Takehiko Todokoro [1], Kentaro Ide [1], Rikako Sanuki [2,3], Emi Kawano [2], Shosuke Yoshida [2], Hiroki Ishida [1]
([1] Res. Inst., Gekkeikan Sake Co., Ltd., [2] Grad. Sch. Biol. Sci., NAIST, [3] Sch. Sci. Technol., Kyoto Inst. Technol.)

17:18 2Np09 Production of P(3HB-*co*-3HHx) from CO_2 by pH-stat jar cultivation of engineered hydrogen-oxidizing bacterium

····· ○Kenji Tanaka [1], Izumi Orita [2], Toshiaki Fukui [2] ([1] Fac. Humanity-Oriented. Sci. Eng., Kindai Univ., [2] Sch. Life Sci. Technol, Tokyo Tech)

17:30 2Np10 Production of PHB using sewage and cheese whey

····· ○Young Cheol Chang (Div. Sustain. Environ. Eng., Muroran Inst. Technol.)

Room O 142 (Engineering Building #1) (15:30–17:42)

【Biomass, Bioresource and Energy Engineering; Bioremediation】

15:30 2Op01 Screening of *Clostridium* bacteria for Alcohol production

····· ○Hironobu Ootsuchi, Ryusei Tsurugai, Misaki Nakajima, Ren Miyoshi, Yuya Sonobe, Ryuki Kinoshiro, Hidenori Shimura, Hirofumi Aritani, Yuji Hatada
(Fac. Eng.,Saitama Inst. Technol)

15:42 2Op02 Genome analysis of a thermotolerant budding yeast isolated in Kumamoto

····· Ayuki Hamaguchi [2], Shiori Ohtera [1], Hisataka Taguchi [1], ○Yu Sasano [1]
([1] Fac. Biotechnol. Life Sci., Sojo Univ., [2] Grad. Sch. Eng., Sojo Univ.)

15:54 2Op03 Pentose fermentation by novel yeast species belonging to Spathaspora clade

····· ○Ayuki Hamaguchi, Hisataka Taguchi, Yu Sasano (Grad. Sch. Eng., Sojo Univ.)

16:06 2Op04 Efficient production of xylitol by co-cultivation of *Candida magnoliae* and flocculating yeast

····· ○Taiki Yamawaki, Yasuaki Higashino, Youichi Kumada, Junichi Horiuchi
(Grad. Sch. Sci. Technol., Kyoto Inst. Technol.)

16:18 2Op05 Efficient enzymatic saccharification of the macroalgal polysaccharide beta-1,3-xylan using thermostable enzymes

····· ○Aoi Kaji [1], Sae Tanaka [2], Saki Ishiguro [2], Chiharu Nishiyama [1], Hideki Nakayama [3], Kiyotaka Hara [4], Fumiyoshi Okazaki [1]
([1] Grad. Sch. Bioresour., Mie Univ., [2] Fac. Bioresour., Mie Univ., [3] Grad. Sch. Fish. Sci. Environ. Stud., Nagasaki Univ., [4] Sch. Food Nutr. Sci., Univ. Shizuoka.)

16:30 Break

16:42 2Op06 Cost-effective production of D-lactic acid from lignocellulosic biomass by simultaneous saccharification and fermentation using genetically engineered lactic acid bacteria

····· ○Sayuri Kubo [1], Yoichi Kumada [1], Jun-ichi Horiuchi [1], Kenji Okano [2], Akihiko Kondo [3], Tsutomu Tanaka [3]
([1] Grad. Sch. Sci. Technol., Kyoto Inst. Technol., [2] Grad. Sch. Eng., Osaka Univ., [3] Grad. Sch. Eng, Kobe Univ.)

16:54 2Op07 Transcriptional regulation of saccharification enzyme genes by Hap complex in the fungus *Talaromyces cellulolyticus*

……◯Tatsuya Fujii, Tomotake Morita (RISC, AIST)

17:06 2Op08 Screening of mutant strains suitable for increasing the performance of *Escherichia coli* fuel cell using mediator color change as an indicator

……◯Hajime Fujihira[1], Yoshihiro Ojima[1], Daisuke Koma[2], Takashi Ohmoto[2], Masayuki Azuma[1]
([1] Grad. Sch. Eng., Osaka Metro. Univ., [2] ORIST)

17:18 2Op09 Extracellular electron transfer mechanism of sulfate-reducer *Cupidesulfovibrio* sp. strain HK-II via novel PilA and cytochromes

……◯Kyosuke Kawashima[1], Ichio Kubono[1], Genta Ikeuchi[2], Hiroyuki Futamata[1,3,4]
([1] Grad. Sch. Integr. Sci. Technol., Shizuoka Univ., [2] Fac. Eng. Shizuoka Univ.,
[3] Grad. Sch. Sci. Technol. Shizuoka Univ., [4] Res. Inst. Green Sci. Technol., Shizuoka Univ.)

17:30 2Op10 Enhancing cadmium sulfide semiconductor precipitation by *Escherichia coli* and its application to the light-driven hydrogen production

……◯Maho Yamamoto[1], Yuka Shinohara[1], Yuki Honda[1], Motonori Watanabe[2], Tatsumi Ishihara[2,3], Hiroshi Fujii[1]
([1] Fac. Sci., Nara Women's Univ., [2] I2CNER, Kyushu Univ., [3] Grad. Sch. Eng., Kyushu Univ.)

Luncheon Seminars（11:30–12:30）

Room B IB015

2L-B01 SHIMADZU CORPORATION

Room D IB013

2L-D01 TechnoSuruga Laboratory Co., Ltd.

Room G ES022

2L-G01 Bruker Japan K.K.

Room I ES025

2L-I01 Tsuji Oil Mills Co., Ltd.

Corporate Research Seminars for Students（18:00–19:00）

Room E ES Hall

2C-E01 TOYOBO CO., LTD.

Room F ES021

2C-F01 Kao Corporation

Room G ES022

2C-G01 Kyoritsu Seiyaku Corporation

Room H ES024

2C-H01 Mitsubishi Chemical Corporation

Room I ES025

2C-I01 Sanwa Starch Co., Ltd.

September 5, 2023

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

Symposium

Room A IB Lecture Hall (9:00–11:00)

Global Challenges for Unexplored Analytical Technologies to Accelerate Drug Discovery and Formulation of Macromolecular Drug Modalities

Chair: **Takeshi Bamba**

9:00 3S-Aa01 Current status and perspectives of analytics for biopharmaceuticals and virus vectors
····· ◯Uchiyama Susumu (Grad. Sch. Eng., Osaka Univ.)

9:20 3S-Aa02 Protein structure analysis by spectroscopic techniques
····· ◯Taiji Oyama, Satoko Suzuki, Ai Yamane, Ken-ichi Akao (JASCO Corp.)

9:35 3S-Aa03 Challenges and Future in the upstream process of recombinant antibody production
····· ◯Onitsuka Masayoshi (Grad. Sch. Biosci. Bioind, Tokushima Univ.)

Chair: **Fumio Matsuda**

9:55 3S-Aa04 Analytical and process solutions for biologics using spectroscopic technologies
····· ◯Satoru Wakabayashi (HORIBA, Ltd.)

10:10 3S-Aa05 Structure-function relationship based on the conformation of IgG observed by MAXS method.
····· ◯Matsumoto Takashi [1], Sato Akimi [2], Kameyama Yoshitaka [2], Kozono Takuma [2], Tonozuka Takashi [2], Sato Takashi [1], Hasegawa Tomokazu [1], Kanda Hiroyuki [1], Nishikawa Atsushi [2]
([1] Rigaku Corporation, [2] Tokyo Univ. Agric. Technol.)

Chairs: **Fumio Matsuda, Takeshi Bamba**

10:25 Discussion

Room B IB015 (9:00–11:00)

Evolution of Cell Manufacturing Engineering for the Development of Cell Industry —Aiming for World-leading Cell Manufacturing—

Chair: **Masanobu Horie**

9:00 3S-Ba01 Establishment of the Academic System for Cell Manufacturing
····· ◯Yoshitaka Miyamoto (National Center for Child Health and Development)

9:04 3S-Ba02 Development of manufacturing system based on cell manufacturability for regenerative medicine
····· ◯Masaihro Kino-oka [1,2] ([1] Dept. Biotechnol., Grad. Sch. Eng., Osaka Univ., [2] Research Base for Cell Manufacturability, Grad. Sch. Eng., Osaka Univ.)

9:32 3S-Ba03 Production of autologous iPSCs for clinical applications: Challenges using closed culture system
····· ◯Tsukahara Masayoshi (CIRA_F)

Chair: **Yoshitaka Miyamoto**

10:00 3S-Ba04 Quality by Design in the manufacture of cellular products
……◯Nana Kawasaki (Grad. Sch. Med. Life Sci., Yokohama City Univ.)

10:28 3S-Ba05 Culture Technology for Biomanufacturing with Animal Cells: Development and Potential of Wetware Platforms
……◯Ikko Kawashima (Integriculture Inc)

10:56 3S-Ba06 Consideration for cell manufacturing diversity and future perspective.
……◯Horie Masanobu (Agency for Health, Safety and Environment, Kyoto Univ.)

Room E ES Hall (9:00–11:00)

Exploitation of Microbial Dark Matter Based on Data-Driven Approach

9:00 Opening Remarks
……Takaaki Horinouchi

Chair: **Takaaki Horinouchi**

9:03 3S-Ea01 Data-driven approaches to microbial dark matter
……◯Wataru Iwasaki [1,2,3,4,5]
([1] Grad. Sch. Frontier Sci., UTokyo, [2] Grad. Sch. Sci., UTokyo, [3] AORI, UTokyo, [4] IQB, UTokyo, [5] CRIIM, UTokyo)

9:28 3S-Ea02 Development of an integrated microbiome database Microbiome Datahub
……◯Hiroshi Mori (NIG)

Chair: **Hideki Aoyagi**

9:53 3S-Ea03 Metagenomic information reveals the ecology and functions of wastewater treatment microbiome
…… ◯Takashi Narihiro (BPRI, AIST)

10:18 3S-Ea04 Utilization of uncultured microorganisms for bioremediation
…… ◯Yoh Takahata (Taisei Corp.)

Chairs: **Takaaki Horinouchi, Hideki Aoyagi**

10:43 Panel Discussion

Room F ES021 (9:00–11:00)

Trends in White Biotechnology for Lignin Valorization

9:00 Opening Remarks
…… Tomonori Sonoki

Chair: **Tomonori Sonoki**

9:02 3S-Fa01 Introducing lignin and its chemical structure
……◯Takuya Akiyama (Grad. Sch. Agric. Life Sci., Univ. Tokyo)

9:18 3S-Fa02 Metabolic engineering of the lignin biosynthetic pathway for structural modification of lignin and wood characteristics
……◯Shinya Kajita (Grad. Sch. BASE)

9:34 3S-Fa03 Bacterial catabolic systems for the conversion of various lignin-related aromatic compounds
……◯Eiji Masai (Nagaoka Univ. Technol.)

9:50 3S-Fa04 Production of a novel platform chemical from lignin by microbial fermentation and its pplication.
……◯Masaya Nakamura [1], Yuichiro Otsuka [1], Takuma Araki [1], Yuzo Suzuki [1], Naofumi Kamimura [2], Eiji Masai [2]
([1] FFPRI, [2] Nagaoka Univ. Technol.)

10:06 Break

Chair: **Naofumi Kamimura**

10:10 3S-Fa05 Three-component separation of lignocellulose and the process for producing monoaromatic compounds
……◯Takuya Yoshikawa (Dept. Agro-environ. Sci., Obihiro Univ. Agric. Vet. Med.)

10:26 3S-Fa06 Selective production of aromatic compounds from lignin
……◯Tomonori Sonoki (Fac. Agric. Life Sci., Hirosaki Univ.)

10:42 3S-Fa07 Lignin components of sugarcane bagasse alkaline extract and its industrial applications
……◯Hiroyuki Kurihara [1], Shigeyuki Funada [1], Atsushi Minamino [2] ([1] Toray Industries, Inc., [2] Cellulosic Biomass Technology)

10:58 Closing Remarks
……Eiji Masai

Room H ES024 (9:00–11:00)

Yeasts as Life: Understanding the Ecological Behavior and Diversity

9:00 Opening Remarks
……Daisuke Watanabe

Chair: **Daisuke Watanabe**

9:03 3S-Ha01 Diversity and Ecology of Yeasts in Drosophila
……◯Taisuke Seike [1,2,3] ([1] Grad. Sch. IST, Osaka Univ., [2] OTRI, Osaka Univ., [3] BDR, RIKEN)

Chair: **Taisuke Seike**

9:22 3S-Ha02 Molecular mechanisms regulating sexual differentiation in fission yeast
……◯Yoko Otsubo, Akira Yamashita (Nat. Inst. Basic. Biol.)

Chair: **Daisuke Watanabe**

9:41 3S-Ha03 Phenotypic plasticity of marine-derived black yeast
……◯Gohta Goshima (Sugashima MBL, Nagoya Univ.)

Chair: **Taisuke Seike**

10:00 3S-Ha04 Unattended yeasts in forests
……◯Rikiya Endoh (BRC, RIKEN)

Chair: **Daisuke Watanabe**

10:19 3S-Ha05 Remarkable adaptability to extreme environments of Antarctic and Arctic yeasts
……◯Masaharu Tsuji [1,2] ([1] Natl. Inst. Technol. Asahikawa College, [2] Natl. Inst. Polar Res.)

Chair: **Taisuke Seike**

10:38 3S-Ha06 Interaction of yeasts in fermentation environments
……◯Daisuke Watanabe (Grad. Sch. Biol. Sci., NAIST)

10:57 Closing Remarks
……Taisuke Seike

Room J Okuma Hall (9:00–11:00)

INTPART-MISC International Joint Symposium

Chair: **Shogo Yoshimoto**

9:00 Opening Remarks
..... Katsutoshi Hori

9:05 3S-Ja01 Trimeric autotransporter adhesins: structure, function, evolution
..... ○Dirk Linke (Dept. Biosci., Univ. of Oslo)

9:45 3S-Ja02 Methods and assays to study protein transport *in vitro*
..... ○Enguo Fan (Peking Union Med. Coll./Chinese Academy of Med. Sci.)

10:25 3S-Ja03 Analysis of fish epidermal bacteriota for the development of novel disease control methods in aquaculture
..... ○Hajime Nakatani [1], Fumiyoshi Okazaki [2], Tomoko Arakawa [1], Dien Anggorowati [4], Khairul Anam [3], Dwi Susilaningsih [3], Yutaka Tamaru [2], Katsutoshi Hori [1]
([1] Grad. Sch. Eng., Nagoya Univ., [2] Grad. Sch. Bioresour., Mie Univ., [3] RC-AM, BRIN, [4] RC-MLB, BRIN)

10:55 Closing Remarks
..... Shogo Yoshimoto

Room J Okuma Hall (13:00–15:00)

INTPART-MISC International Joint Symposium

13:00 Opening Remarks
..... Hajime Nakatani

Chair: **Hajime Nakatani**

13:02 3S-Jp01 Loading cargo and messaging by bacterial extracellular vesicles
..... ○Hanne C Winther-Larsen [1], Petter Langlete [1], Anders Krabberoed [2] ([1] Dept. Pharm., Univ. of Oslo, [2] Dept. Biosci., Univ. of Oslo)

13:42 3S-Jp02 Using *Escherichia coli* as a model to test *Helicobacter pylori* urease inhibitors
..... ○Marta Sanz Gaitero [1], Eva Mariana de Sousa Cunha [1], Dirk Linke [2], Hartmut Luecke [3]
([1] Structural Biology and Drug Discovery group, Centre for Molecular Medicine Norway, Univ. of Oslo, [2] Dept. Biosci., Section for Genetics and Evolutionary Biology, Univ. of Oslo, [3] Dept. Physiol., Biophys., Univ. of California, Irvine)

14:02 3S-Jp03 Chemical decontamination strategies for treating peri-implant diseases - using an in vitro dental pellicle-, and a multispecies biofilm model
..... ○Badra Hussain [1], Havard Jostein Haugen [1], Roger Simm [2]
([1] Dept. Biomater., Inst. Clin. Dent., Univ. of Oslo, [2] Inst. Oral Biol., Fac. Dent., Univ. of Oslo)

14:22 3S-Jp04 Experimental and computational approaches to the molecular characterization of a bacterial adhesin protein
..... ○Katsutoshi Hori, Jun Sasahara, Amane Kato, Shogo Yoshimoto
(Grad. Sch. Eng., Nagoya Univ.)

14:52 Closing Remarks
..... Katsutoshi Hori

Room K Okuma Lecture Room 2F (9:00–11:00)

Current Advances in Cell-Free Protein Synthesis: From Lab to Industry

9:00 Opening Remarks
…… Teruyo Kato

Chair: **Hideo Nakano**

9:02 3S-Ka01 What can be done using PURE*frex*?
…… ○Takashi Kanamori (GeneFrontier Corp.)

9:27 3S-Ka02 Development of translation enhancing peptide and its use in the bio-industry
……○Teruyo Kato, Hideo Nakano (Grad. Sch. Bioagric., Sci., Nagoya Univ.)

Chair: **Jasmina Damnjanović**

9:42 3S-Ka03 A modified PURE system for evolutionary molecular engineering and its industrial applications
…… ○Naoto Nemoto [1,2] ([1] Saitama University, [2] Epsilon Molecular Engineering)

10:07 Break

Chair: **Teruyo Kato**

10:15 3S-Ka04 *In vitro* molecular display for enzyme evolution
……○Jasmina Damnjanović [1], Naoto Nemoto [2], Hideo Nakano [1]
([1] Grad. Sch. Bioagric., Sci., Nagoya Univ., [2] Grad. Sch. Sci. Eng., Saitama Univ.)

Chair: **Jasmina Damnjanović**

10:30 3S-Ka05 TRAP display for developing functional antibody-like proteins and macrocyclic peptides
…… ○Hiroshi Murakami [1,2] ([1] Grad. Sch. Eng., Nagoya Univ., [2] InFuS, Nagoya Univ.)

10:55 Closing Remarks
…… Jasmina Damnjanović

Oral Presentations

Room A IB Lecture Hall (13:00–16:36)

【Enzymology, Enzyme; Proteins】

13:00 3Ap01 Flux regulation in the violacein biosynthesis pathway using enzyme assembly formation
……○Rioko Ito, Natsuko Miura, Michihiko Kataoka (Grad. Sch. Agric., Osaka Metro. Univ.)

13:12 3Ap02 Construction of a heterologous expression system for PhaZ, enzymes that degrade marine biodegradable plastics, and methods for measuring its degradation activity.
…… ○Ami Kakinuma, Natsuko Miura, Mitihiko Kataoka (Grad. Sch. Agric., Osaka Metro. Univ.)

13:24 3Ap03 Design of ancestral tryptophan synthase to produce L-Trp derivatives at gram scale
…… ○Misaki Ohata, Azusa Miyata, Sohei Ito, Taichi Chisuga, Shogo Nakano
(Grad. Sch. Integr. Pharm. Nutr. Sci., Univ. Shizuoka)

13:36 3Ap04 Construction of a high-throughput screening system of an enzyme using hydrogel beads and cell free protein synthesis
…… ○Kensei Orita [1], Yui Okawa [1], Ryota Tokuo [1], Kousuke Minamihata [1], Noriho Kamiya [1,2]
([1] Grad. Sch. Eng., Kyushu Univ., [2] CFC, Kyushu Univ.)

13:48 3Ap05 Crystal structure of a *de novo* enzyme, ferric enterobactin esterase Syn-F4
……Kodai Kurihara [1], Koji Umezawa [2,3], Ann Donnelly [4], Michael Hecht [4], ○Ryoichi Arai [1,3]
([1] Fac. Textile Sci. Technol., Shinshu Univ., [2] Fac. Agric., Shinshu Univ., [3] Inst. Biomed. Sci.,
[4] Dept. Chem., Princeton Univ.)

14:00 Break

14:12 3Ap06 Application of Logistic Regression Models for Identification of Residues Determining Substrate Specificity in Enzymes

····· ○Teppei Niide, Sou Sugiki, Seiya Mori, Yoshihiro Toya, Hiroshi Shimizu (Grad. Sch. IST, Osaka Univ.)

14:24 3Ap07 Thermal stability design of enzyme incorporated with evolutionary and structural information

····· ○Keita Miyawaki, Teppei Niide, Yoshihiro Toya, Hiroshi Shimizu (Grad. Sch. IST, Osaka Univ.)

14:36 3Ap08 Solution of Soluble Mechanism of Heterologous Proteins by Machine Learning and Formal Concept Analysis

····· ○Yuto Hojo [1], Kodai Suzuki [1], Kazutoshi Sakakibara [3], Masaki Nakamura [3], Daisuke Matsui [2], Yasuhisa Asano [3]

([1] Grad. Sch. Eng., Toyama Pref. Univ., [2] Coll. Life Sci., Ritsumeikan Univ., [3] Fac. Eng., Toyama Pref. Univ.)

14:48 3Ap09 Improvement of heterologous soluble expression of L-amino acid oxidase using statistical analysis

····· ○Ayuta Nakahara [1], Ai Kouno [2], Yosuke Toyotake [2], Mamoru Wakayama [2], Daisuke Matsui [2]

([1] Grad. Sch. Life Sci., Ritsumeikan Univ., [2] Coll. Life Sci., Ritsumeikan Univ.)

15:00 3Ap10 Combination of enzymatic oxidation and reduction for D-amino acid derivative toward a one-pot process

····· ○Kazuki Shiroma [1], Wakana Asanuma [2], Yosuke Toyotake [2], Mamoru Wakayama [2], Daisuke Matsui [2]

([1] Grad. Sch. Life Sci., Ritsumeikan Univ., [2] Coll. Life Sci., Ritsumeikan Univ.)

15:12 Break

15:24 3Ap11 Synthesis of β-glucosides of primary alcohols via glucosyl transfer reaction catalyzed by *Agrobacterium* sp. No.201.

····· ○Ozora Ishikawa [1], Yutaka Takeuchi [1], Michiki Takeuchi [2], Ryotaro Hara [2], Yusuke Takahashi [3], Jun Ogawa [4], Makoto Ueda [1,2]

([1] Dept. Materials Chem. Bioeng., Natl. Inst. Technol., Oyama Coll., [2] Ind. Microbiol., Grad. Sch. Agric., Kyoto Univ., [3] Tsukuba Res. Lab., Tokuyama Co., [4] Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ.)

15:36 3Ap12 Identification of a previously unrecognized nucleoside metabolic pathway in haloarchaea

····· ○Takaaki Sato [1,2], Sanae Utashima (Hodo) [1], Yuta Yoshii [1], Kosuke Hirata [1], Shuichiro Kanda [1], Yushi Onoda [1], Jian-qiang Jin [1], Suyi Xiao [1], Ryoko Minami [1], Hikaru Fukushima [1], Ayako Noguchi [3], Yoshiyuki Manabe [3,4], Koichi Fukase [3,4], Haruyuki Atomi [1,2]

([1] Grad. Sch. Eng., Kyoto Univ., [2] Inst. Adv. Energy, Kyoto Univ., [3] Grad. Sch. Sci., Osaka Univ., [4] Forefront Res. Center, Osaka Univ.)

15:48 3Ap13 Enzymatic property and physiological function of methanol dehydrogenases from *Acidomonas methanolica*

····· Haruki Hoshino, Rina Hieda, Yasuhito Horita, Daiki Utsunomiya, ○Yoshitaka Ano (Fac. Agric., Ehime Univ.)

16:00 3Ap14 Search for lambda-carrageenase from nature and its properties

····· ○Masahiro Kurakake, Keisuke Kurata, Yukitsugu Maeda, Kyouhei Koumo, Masaki Yamasita (Fac. Life Sci. Biotechnol., Fukuyama Univ.)

16:12 3Ap15 Potential production of rare-disaccharide isoprimeverose by enzyme produced in *Aspergillus oryzae*

····· ○Fahmi Baihaqqi [1], Tomohiro Suzuki [1], Satoshi Wakai [3], Prihardi Kahar [1], Akihiko Kondo [1,2], Chiaki Ogino [1]

([1] Grad. Sch. Eng, Kobe Univ., [2] Grad. Sch. Sci. Technol. Innov., Kobe Univ., [3] JAMSTEC)

16:24 3Ap16 Stabilization of enzyme activity and its effect of glycerol dehydrogenase from *Gluconobacter*

····· ○Risa Kaneda, Seina Hirano, Yoshitaka Ano (Fac. Agric., Ehime Univ.)

Room B IB015 (13:00–16:36)

【Enzymology, Enzyme; Proteins】

13:00 3Bp01 Stereoselective synthesis of rare alliin stereoisomers using microbial Fe(II)/alpha-ketoglutarate-dependent dioxygenases

····· ○Ryosuke Kanzawa [1], Taku Mizutani [1], Ryotaro Hara [1], Makoto Ueda [1,2], Jun Ogawa [1]
([1] Grad. Sch. Agric., Kyoto Univ., [2] NIT, Oyama College)

13:12 3Bp02 Screening and application of microbial enzymes useful for the synthesis of S-substituted cysteine derivatives

····· ○Taku Mizutani [1], Ryotaro Hara [1], Michiki Takeuchi [1], Makoto Hibi [2], Makoto Ueda [1,3], Jun Ogawa [1]
([1] Grad. Sch. Agric., Kyoto Univ., [2] Fac. Eng., Toyama Pref. Univ., [3] NIT, Oyama College)

13:24 3Bp03 Characterization of glycerol-3-phosphate cytidylyltransferase from *Thermococcus kodakarensis* KOD1

····· ○Naoki Iwanaga [1], Yuichi Koga [1,2], Noriko Yamano-Adachi [1], Takeshi Omasa [1]
([1] Grad. Sch. Eng., Osaka Univ., [2] Fac. Eng., Okayama Univ. Sci.)

13:36 3Bp04 Inhibition mechanism of cytokine activity of macrophage migration inhibitory factor by small molecule inhibitors based on the neutron crystal structure

·····○Toshinori Ezawa [1], Yumi Kariya [2], Yu Hirano [3], Katsuhiro Kusaka [4], Taro Tamada [3], Hideki Wakui [1], Masafumi Odaka [1], Hirotoshi Matsumura [1]
([1] Grad. Sch. Eng., Sci., Akita Univ., [2] Coop. Res. Cent., Akita Univ., [3] Inst. Quant. Life Sci., QST, [4] Frontier Res. Center for Appl. Atomic Sci., Ibaraki Univ.)

13:48 3Bp05 A new enzymatic method for the preparation of antibody-drug conjugates using a novel fusion protein

····· ○Riko Nishioka [1], Ryuya Iida [1], Kosuke Minamihata [1], Ryo Sato [1], Michio Kimura [1], Noriho Kamiya [1,2]
([1] Grad. Sch. Eng., Kyushu Univ., [2] CFC, Kyushu Univ.)

14:00 Break

14:12 3Bp06 Self-assembly mechanism of the main capsid protein from archaeal virus

····· ○Takenori Satomura [1,2], Toi Mishina [1], Reo Hayashi [1], Shinji Sugihara [1], Shin-ichiro Suye [1]
([1] Grad. Sch. Eng. Fukui Univ., [2] Life Univ. Fukui)

14:24 3Bp07 Expression of polypeptide on the frustule of the marine diatom *Thalassiosira pseudonana*

·····Yusuke Matsuda, Ginga Shimakawa, ○Shusuke Sato
(Grad. Sch. Sci. Technol., Kwansei Gakuin Univ.)

14:36 3Bp08 Evaluation of reconstituted Tk-SP by split intein

····· ○So Shirasu [1], Yusuke Tatsumi [1], Noriko Yamano-Adachi [1,3], Yuichi Koga [2], Takeshi Omasa [1,3]
([1] Grad. Sch. Eng., Osaka Univ., [2] Fac. Eng., Okayama Univ. Sci., [3] MAB)

14:48 3Bp09 Identification of the Na^+ activation site of K^+ transporter in *Escherichia coli*

·····○Ellen Tanudjaja [1], Naomi Hoshi [1], Kaneyoshi Yamamoto [2], Kunio Ihara [3], Tadaomi Furuta [4], Masaru Tsujii [1], Yasuhiro Ishimaru [1], Nobuyuki Uozumi [1]
([1] Grad. Sch. Eng., Tohoku Univ., [2] Dept. Front. Biosci., Hosei Univ., [3] Center for Gene Research., Nagoya Univ., [4] Sch. Life Sci. Technol, Tokyo Tech)

15:00 3Bp10 Novel proteomics based on the solubility of denatured total intracellular proteins

····· ○Mirei Date [1], Tsugumi Shiokawa [2], Hiroko Tada [2], Tomoko Honjo [1], Ai Miyamoto [1], Nobuhiro Okada [3], Junichiro Futami [1]
([1] Grad. Sch. ISEHS., Okayama Univ., [2] Dept. Inst. Anal., Okayama Univ., [3] Grad. Sch., Med., Kyoto Pref. Med. Univ.)

15:12 Break

15:24 3Bp11 Development of tandem trimer nanobody for specific binding on target cells by affinity optimization

·····○Onggono Suwandi, Tetsuya Kadonosono (Sch. Life Sci. Technol, Tokyo Tech)

15:36 3Bp12 Machine-learning-assisted affinity maturation of an antibody fragment simultaneously improving the bacterial expression and structural stability

····· ○Tomoyuki Ito [1], Sakiya Kawada [1], Hikaru Nakazawa [1], Akikazu Murakami [2,3], Mitsuo Umetsu [1,4]
([1] Grad. Sch. Eng., Tohoku Univ., [2] Grad. Sch. Biomed. Sci., Tokushima Univ., [3] RePHAGEN Co. Ltd., [4] AIP, RIKEN)

15:48 3Bp13 Development of the platform for the new binding scaffolds based on proteins from hyperthermophiles

····· ○Sosuke Tsukimoto [1], Masahide Nagao [1], Noriko Yamano-Adachi [1,3], Yuichi Koga [2], Takeshi Omasa [1,3]
([1] Grad. Sch. Eng., Osaka Univ., [2] Fac. Eng., Okayama Univ. Sci., [3] MAB)

16:00 3Bp14 Investigation of surface display of proteinaceous molecular recognition elements in *Escherichia coli*

····· ○Raio Kawai, Koreyoshi Imamura, Hiroyuki Imanaka
(Grad. Sch. of Environ., Life, Nat. Sci. & Tech., Okayama Univ.)

16:12 3Bp15 Development of IL-11 binding mutants using the chitin-binding domain of Archaea

····· ○Yoshihide Makino [1,2], Sakura Hayashi [1], Tamotsu Kanai [1,2] ([1] Fac. Eng., Toyama Pref. Univ., [2] Biotechnol. Res. Center, Toyama Pref. Univ.)

16:24 3Bp16 Development of a Novel NADP Transporter

····· ○Matthew Imanaka [1,2], Kohsuke Honda [1,2], Hiroya Tomita [1,2], Kentaro Miyazaki [1]
([1] ICBiotech, Osaka Univ., [2] OTRI, Osaka Univ.)

Room C IB014 (13:00–16:36)

【Proteins; Antibody Engineering】

13:00 3Cp01 Intracellular photoactivation of proteins using sterically bulky caging

····· ○Ryotaro Yamamoto [1], Satoshi Yamaguchi [1], Chiharu Moriyama [2], Akimitsu Okamoto [1]
([1] Grad. Sch. Eng., Univ. Tokyo, [2] Fac. Eng., Univ. Tokyo)

13:12 3Cp02 Development of Antigen Affinity Optimization Technology by Analyzing Activation and Exhaustion Levels of CAR-T Cells.

····· ○Yuki Sakamoto, Tetsuya Kadonosono (Sch. Life Sci. Technol, Tokyo Tech)

13:24 3Cp03 Identification of domain of protein disulfide isomerase involved in suppression of amyloid-beta fibrillation.

····· ○Harune Ichida, Masafumi Sakono (Grad. Sch. Sci. Eng., Univ. Toyama)

13:36 3Cp04 Development of a translation-enhancing nascent peptide sequence discovery technique using cDNA display methodology

····· ○Rikuto Takai, Teruyo Kato, Jasmina Damnjanović, Nana Odake, Hideo Nakano
(Grad. Sch. Bioagric., Sci., Nagoya Univ.)

13:48 3Cp05 Identification of antibody mimetic nanobodies with antibody-guided screening

····· ○Takumi Ogawara, Tetsuya Kadonosono
(School of Life Science and Technology, Tokyo Institute of Technology, Yokohama 226-8501, Japan.)

14:00 Break

14:12 3Cp06 Relationship between structure and emulsifying ability of yeast cell wall-derived emulsifying glycoproteins

····· ○Koshi Noguchi, Minori Nizuka, Yoshihiro Ojima, Masayuki Azuma
(Grad. Sch. Eng., Osaka Metro. Univ.)

14:24 3Cp07 Development of anti-coronavirus single-chain antibodies from the human Naive library

····· ○Nijiho Saito, Yoshihide Makino, Tamotsu Kanai (Grad. Sch. Bio. Pha. Eng., Toyama Pref. Univ.)

14:36 3Cp08 Direct conversion of mouse-type monoclonal antibody to the corresponding catalytic antibody ~Enzymatization of antibody and the biochemical features~

····· ○Yuina Ito [1], Moe Tsujita [1], Taizo Uda [2], Emi Hifumi [3,4]
([1] Grad. Eng., Oita Univ., [2] ISIT, [3] Oita Univ. Inst. Res. Mgmt., [4] Oita Univ. Res. Glb. Infect. Dis.)

14:48 3Cp09 Development of evaluation system for antibody epitopes by Co-display of antibodies and Antigen on Mammalian Cells
····· ○Ning Lin, Tetsuya Kadonosono (Sch. Life Sci. Technol, Tokyo Tech)

15:00 3Cp10 Synthesis of epitope-targeting antibody based on native Protein-Protein interaction
·····○Hikaru Nakazawa[1], Taiji Katsuki[1], Takashi Matsui[2], Yoshikazu Tanaka[3], Mitsuo Umetsu[1]
([1] Grad. Sch. Eng., Tohoku Univ., [2] Grad. Sch. Sci., Kitasato Univ., [3] Grad. Sch. Agric. Sci., Tohoku Univ.)

15:12 Break

15:24 3Cp11 Acquisition and characterization of a novel monoclonal antibody against SARS-CoV-2
····· ○Monami Kihara[1], Makoto Ishii[3], Tetsunari Hase[3], Takaaki Kojima[2], Teruyo Kato[1], Hideo Nakano[1]
([1] Grad. Sch. Bioagric., Sci., Nagoya Univ., [2] Grad. Sch. Agric., Meijo Univ., [3] Grad. Sch. Med., Nagoya Univ.)

15:36 3Cp12 Development of VHH antibody mutants for use in immunosensors for monitoring
·····○Mei Tabata, Tatsunori Numata, Akihiro Mihara, Jun-ichi Horiuchi, Yoichi Kumada
(Grad. Sch. Sci. Technol., Kyoto Inst. Technol.)

15:48 3Cp13 Controlling antigen-binding affinity of VHH antibody by point mutation of CDR4
····· ○Akihiro Mihara, Tatunori Numata, Mei Tabata, Jun-ichi Horiuchi, Yoichi Kumada
(Grad. Sch. Sci. Technol., Kyoto Inst. Technol.)

16:00 3Cp14 Fabrication of nanobody-based ratiometric bioluminescent quenchbody for simple and rapid detection
····· ○Yinghui Yang[1], Akihito Inoue[1], Takanobu Yasuda[2], Bo Zhu[2], Hiroshi Ueda[2], Tetsuya Kitaguchi[2]
([1] Sch. Life Sci. Technol, Tokyo Tech, [2] CLS, Tokyo Tech)

16:12 3Cp15 Development of effective technique for the production of IgG-type stereospecific monoclonal antibodies.
····· ○Yushi Isozaki[1], Kanta Tsumoto[2], Masato Suzuki[1], Tomoyuki Yasukawa[1], Masahiro Tomita[2]
([1] Grad. Sch. Sci., Univ. Hyogo., [2] Grad. Sch. Eng., Mie Univ.)

16:24 3Cp16 The development of epitope mapping utilizing PURE ribosome display and NGS
····· ○Beixi Jia[1], Teruyo Kato[1], Takaaki Kojima[2], Hideo Nakano[1]
([1] Grad. Sch. Bioagric., Sci., Nagoya Univ., [2] Grad. Sch. Agric., Meijo Univ.)

Room D IB013 (13:00–16:36)

【Cell and Tissue Engineering; Biomedical Engineering】

13:00 3Dp01 Investigation of the inhibitor for cancer cell invasion via chloride ion efflux in human breast cancer cell lines.
·····○Samrat Mukherjee[1,2], Chikashi Nakamura[2], Ayana Yamagishi[2]
([1] Grad. Sch. Eng., Tokyo Univ. Agric. Technol., [2] AIST)

13:12 3Dp02 Elucidation of radio sensitizing mechanism of hydrogen peroxide using genome editing cells
····· ○Amane Washio[1], Winda Tasia[1], Koki Yamate[1], Tsubasa Matsuzawa[2], Yutaro Mori[1], Prihardi Kahar[1], Akihiko Kondo[3], Chiaki Ogino[1]
([1] Grad. Sch. Eng, Kobe Univ., [2] Fac. Eng., Kobe Univ., [3] Grad. Sch. Sci. Technol. Innov., Kobe Univ.)

13:24 3Dp03 Mutation detection of circulating hybrid cells in blood from cancer patients based on single cell genomic analysis
·····○Ayaka Ishii[1], Kurumi Nakazawa[1], Takatsugu Okekawa[2], Mayu Deki[2], Yu Nakamura[2], Tsuyoshi Tanaka[1], Tomoko Yoshino[1]
([1] Grad. Sch. Eng., Tokyo Univ. Agric. Technol., [2] Hosp., Kyorin Univ. Urol.)

13:36 3Dp04 Preparation of phospholipid polymer-modified magnetic nanoparticles for cancer theranostics
····· ○Takahiro Ono, Akira Ito, Masahiro Kaneko (Grad. Sch. Eng., Nagoya Univ.)

13:48 3Dp05 Inhibition of cancer cell invasion by designing tetraspanin regulatory molecule, EWI-2 mimic peptides
……◯Mina Okochi, Kotomi Kuroha, Thanawat Suwatthanarak, Masayoshi Tanaka
(Sch. Mater. Chem. Technol., Tokyo Tech)

14:00 Break

14:12 3Dp06 Molecular design of dual redox-active polymers for cancer therapy
…… ◯Yuki Ogawa, Akira Ito, Masahiro Kaneko (Grad. Sch. Eng., Nagoya Univ.)

14:24 3Dp07 Development of a novel water dispersible technology for polyphenols by peptide carriers and its application to anaphylaxis inhibitors
…… ◯Tomoki Kodama [1,2], Shogo Kawamura [3], Riku Kawasaki [3], Akira Maeda [1,2], Keita Yamana [3], Atsushi Ikeda [3], Seiji Kawamoto [1,2]
([1] Grad. Sch. Integr. Sci. Life, Hiroshima Univ., [2] HiHA, [3] Grad. Sch. Adv. Sci. Eng, Hiroshima Univ.)

14:36 3Dp08 Releasing properties of functional molecule encapsulated in beta-1,3-1,6-glucan nanoparticles in cream
……◯Masaya Miwa, Kazuya Koumoto (FIRST, Konan Univ.)

14:48 3Dp09 Robotic validation of cell suspension
…… ◯Takaaki Horinouchi, Haruko Shimono, Kikumi Hata, Mitsuyama Toutai (AIRC, AIST)

15:00 3Dp10 Design of filling process with plastic fluid in cell manufacturing for therapeutic use
……◯Riku Naruse [1], Nair Adithya [1], Kazuhiro Fukumori [1], Masahiro Kino-oka [1,2]
([1] Dept. Biotechnology, Grad. Sch. Eng., Osaka University,
[2] Research Base for Cell Manufacturability, Grad. Sch. Eng., Osaka University)

15:12 Break

15:24 3Dp11 Analysis of the migration and aggregation behaviors of mouse neural stem/progenitor cells on radiation-crosslinked PVA hydrogels
……◯Hideki Mori, Yunan Li, Yui Maeda, Masayuki Hara (Grad. Sch. Sci., Osaka Metro. Univ.)

15:36 3Dp12 Development of break-up method for passage of hiPSC aggregates using botulinum hemagglutinin
…… ◯Riku Yamamoto [1], Koya Yamada [1], Masahiro Kino-oka [1,2] ([1] Grad. Sch. Eng., Osaka Univ.,
[2] Research Base for Cell Manufacturability, Grad. Sch. Eng., Osaka Univ.)

15:48 3Dp13 Development of highly efficient and stable hepatocyte differentiation induction technology from human iPS cells
…… ◯Mee-Hae Kim [1], Masahiro Kino-oka [1,2] ([1] Dept. Biotech., Grad. Sch. Eng., Osaka Univ.,
[2] Research Base for Cell Manufacturability, Grad. Sch. Eng., Osaka Univ.)

16:00 3Dp14 Co-differentiation of human iPSCs for developing vascularized skeletal muscle models
……◯Ayumu Matsushima, Kazuki Yamamoto, Hirokazu Akiyama, Hiroyuki Honda, Kazunori Shimizu
(Grad. Sch. Eng., Nagoya Univ.)

16:12 3Dp15 Preparation of mesenchymal stem cells with enhanced immunomodulatory function without genetic manipulation
…… ◯Hamazaki Natsuka, Kotaka Yuya, Akiyama Taichi, Muramatsu Kazuaki
(Grad. Sch. Sci. Eng. Tokyo Denki Univ.)

16:24 3Dp16 Development of platform to study extracellular matrix remodeling potential of human mesenchymal stem cells
…… ◯Shao Ying Tan [1], Mee-Hae Kim [1], Masahiro Kino-oka [1,2] ([1] Grad. Sch. Eng., Osaka Univ.,
[2] Research Base for Cell Manufacturability, Grad. Sch. Eng., Osaka Univ.)

Room F ES021 (13:00–16:36)

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

13:00 3Fp01 Beer brewing characterization of a wild yeast *Saccharomyces cerevisiae var. diastaticus* and isolation of isoamyl acetate high productivity mutants.
····· ○Tomoya Kuwahara (Nara Pref. Inst. Ind. Dev.)

13:12 3Fp02 Analysis of transcription factors affecting the isomaltose assimilation ability of *Saccharomyces cerevisiae* MC87-46,the wild yeast from a flower.
····· ○Rin Numanami [1], Maya Sakai [1], Seiya Sakakibara [1], Takaaki Kojima [1], Takeru Akao [2], Motoyuki Shimizu [1], Masashi Kato [1]
([1] Grad. Sch. Agric., Meijo Univ., [2] NRIB)

13:24 3Fp03 Quantification of purine metabolites in sake
····· ○Yoshiki Asai, Hiroaki Negoro, Hiroki Ishida (Res. Inst., Gekkeikan Sake Co., Ltd.)

13:36 3Fp04 Elucidation of the origin and production mechanism of purine metabolites in sake
····· ○Hiroaki Negoro, Yoshiki Asai, Hiroki Ishida (Res. Inst., Gekkeikan Sake Co., Ltd.)

13:48 3Fp05 Determination of Gamma-aminobutyric acid content in Sake
····· ○Genzo Yokoyama [1], Takayuki Kazuoka [2] ([1] Grad. Sch. of Tokyo University of Agric., [2] Tokyo University of Agric.)

14:00 Break

14:12 3Fp06 Isolation and Characterization of New Sake Brewing Yeasts
····· ○Kokoro Sakamoto [1], Takayuki Kazuoka [2] ([1] Grad. Sch. of Tokyo University of Agric., [2] Tokyo University of Agric.)

14:24 3Fp07 Observation of the inner-wall of a jar involved in black vinegar fermentation by electron microscope
····· ○Haruki Hoshida [1], Masafumi Kameya [1,3], Akira Fujii [2], Kensaku Hamada [2], Hiroyuki Arai [1,3], Masaharu Ishii [1,3]
([1] Grad. Sch. Agric. Life Sci., Univ. Tokyo, [2] Sakamoto Kurozu, Inc., [3] CRIIM, Univ. Tokyo)

14:36 3Fp08 Exploration of sugar alcohol glycoside in sake
····· ○Kou Yoshizawa [1], Asuka Yamada [1], Ryo Katsuta [2], Izumi Kobayashi [1], Chihiro Honda [3], Hitoshi Shindou [1], Masaru Hosaka [1], Masafumi Tokuoka [1]
([1] Grad. Sch. Fac. Appl. Biosci., Tokyo Univ. Agric., [2] Grad. Sch. Fac. Life. Sci., Tokyo Univ. Agric., [3] Sch. Food Nutr. Sci., Univ. Shizuoka.)

14:48 3Fp09 Development of Sake yeast with distinctive brewing characteristics and low production of dimethyl trisulfide, an off-flavor, through crossbreeding utilizing sake yeast strain Hiroshima no. 6.
····· ○Risa Yamasaki [1], Yuya Arase [1], Kenji Oba [2], Tetsuya Goshima [3], Muneyoshi Kanai [3], Takeshi Akao [3], Ritsushi Ohdoi [1]
([1] Food Technol. Res. Center, Hiroshima Prefectural Technol. Res. Institute, [2] Agricultural Technol. Res. Center, Hiroshima Prefectural Technol. Res. Institute, [3] NRIB)

15:00 3Fp10 Protein composition varies depending on spatial region of the sake rice grain
····· ○Kei Takahashi, Hiromi Kohno, Midori Joyo, Masaki Okuda (NRIB)

15:12 Break

15:24 3Fp11 Efficient extraction of components from wood chips using high hydrostatic pressure
····· ○Kazuki Nomura, Kakeru Takano (Kanazawa Inst. Technol.)

15:36 3Fp12 The comparison of response to sound waves during hyphal elongation of yellow-*koji* and black-*koji*
····· ○Taku Matsumoto [1], Takuma Kusumoto [2], Kakeru Masuda [2], Kouji Kojima [1], Noriaki Saigusa [1], Yuji Teramoto [1]
([1] Grad. Sch. Eng., Sojo Univ., [2] Fac. Biotechnol. Life Sci., Sojo Univ.)

15:48 3Fp13 Effect of rotary cultivation of *Aspergillus oryzae* on making koji

····· ○Mizuka Yoshimura [1], Misa Yoshioka [2], Hideyuki Yamashita [3], Takurou Nakagawa [3], Souichirou Ikuta [1,2], Shinsuke Fujiwara [1,2]

([1] Sch. Sci. Technol., Kwansei Gakuin Univ., [2] Grad. Sch. Sci. Technol., Kwansei Gakuin Univ., [3] Higuchi Matsunosuke Shoten Co., Ltd.)

16:00 3Fp14 Visualization of phospholipid distribution in Yamada and Hakutsuru brown rice for sake production using mass microscope

····· ○Eliza Farestiani [1], Eiichiro Fukusaki [1,2,3], Shuichi Shimma [1,2,3]

([1] Dept. Biotechnol., Grad. Sch. Eng., [2] Industrial Biotechnology Initiative Division, Institute for Open and Transdisciplinary Research Initiatives, Osaka Univ, [3] Osaka University Shimadzu Omics Innovation Research Laboratories)

16:12 3Fp15 Effect of shaking on the production of highly soluble tomato powder using a commercial enzyme preparation.

····· ○Ryuichi Hirata, Kouji Kojima, Noriaki Saigusa, Yuji Teramoto (Grad. Sch. Eng., Sojo Univ.)

16:24 3Fp16 Study on Resistant Protein (RP) of Koji Amazake by Different Rice Ingredients

····· ○Ayame Shindo, Rina Matsuda, Kenji Ozeki (Genome Biotechnol. Lab., Kanazawa Inst. Technol.)

Room G ES022 (13:00–16:36)

【Food Science, Food Technology】

13:00 3Gp01 Production of extracellular vesicles in coculture of lactic acid bacteria and yeasts.

····· Yasukaze Nishimura, ○Honoka Kawakami, Yosio Katakura, Shino Yamasaki-Yashiki (Fac. Chem. Mater. Bioeng., Kansai Univ.)

13:12 3Gp02 Analysis of functional ingredients of tempe-like fermented *Moringa oleifera* seeds (*Moringa* tempe) prepared with *Rhizopus* species

····· Hideyuki Aoki [1], Yuka Nabeshima [2], Tomoko Mori [1], Yoshie Ueno [3], ○Hiroshi Oyama [2]

([1] Ikeda Food Res. Co. Ltd., [2] Grad. Sch. Sci. Eng., Setsunan Univ., [3] Dept. of Home Econ., Kyoto Women's Univ.)

13:24 3Gp03 An exploration of microalgae as a NAD^+ booster

····· ○Kai Ishida, Akihiro Koinui, Masayoshi Nakatani, Yuuko Shinohara (R&D Div. NIDEK Co., Ltd)

13:36 3Gp04 Stimulation of intestinal tract immunity by prebiotics of seaweed-derived dietary fiber, ascophyllan

····· ○Yuki Narita, Maki Moriwaki (Grad. Sch. Sci. Eng., Univ. Toyama)

13:48 3Gp05 Development of low-turbidity technology for rinse-free rice by the electro-statical approach

····· ○Yusuke Masuko [1], Kenji Akiba [2], Azusa Ozama [2], Takahiko Masuko [2], Hiroshi Arai [2], Masanori Watanabe [1]

([1] Grad. Sch. Agric., Yamagata Univ., [2] Yamamoto co., ltd.)

14:00 Break

14:12 3Gp06 Development of environmental harmonized okra polysaccharides extraction process

····· ○Mikhael-Christ Dossou-Yovo, Masanori Watanabe (Grad. Sch. Agric. Yamagata Univ.)

14:24 3Gp07 Angiotensin-converting enzyme inhibitory peptides from protease hydrolysate of barley protein

····· ○Kaito Endo [1], Takefumi Karashima [2], Hideharu Takashita [2], Hirokazu Akiyama [1], Kazunori Shimizu [1], Hiroyuki Honda [1]

([1] Grad. Sch. Eng., Nagoya Univ., [2] Sanwa Shurui Co., Ltd)

14:36 3Gp08 Identification of soy-derived peptides with micelle disruption activity of secondary bile acids
····· ○Shota Shimizu[1], Keita Hirano[2], Tsutomu Saitou[2], Hirokazu Akiyama[1], Kazunori Shimizu[1], Hiroyuki Honda[1]
([1] Grad. Sch. Eng., Nagoya Univ., [2] Fuji Oil Holdings Inc. Research Institute for Creating the Future)

14:48 3Gp09 A green process using enzyme, ultrasound, and ultrafiltration for extraction and purification of chondroitin sulfate from jumbo squid cartilage
····· Wen Rui Tang, Jun Rong Zhang, Kai Ruei Yang, Ming Fong Tsai, ○Chia Hung Kuo
(Department of Seafood Science, National Kaohsiung University of Science and Technology)

15:00 3Gp10 L-anserine increases myodifferentiation and muscle contractility in primary human skeletal muscle cells
····· ○Akitoshi Nagai[1,2], Masayuki Ida[1], Takayuki Izumo[1], Masaaki Nakai[1], Hiroyuki Honda[2], Kazunori Shimizu[2]
([1] Suntory Wellness Ltd., [2] Grad. Sch. Eng., Nagoya Univ.)

15:12 Break

15:24 3Gp11 Functional Prediction of Agricultural Products by Targeted Proteomics and Neural Networks
····· ○Yuya Iwakiri, Katsuhisa Kurogi, Kiyoko Nagahama, Yoichi Sakakibara
(Fac. Agric., Univ. Miyazaki)

15:36 3Gp12 Sugarcane metabolome compositional variation based on cultivation conditions in Tokunoshima island
····· ○Yasuhiro Date[1], Chiaki Ishikawa[2], Mitsunori Sato[3], Kenichi Inoue[3], Hiroshi Ono[1]
([1] NAAC, [2] NFRI, [3] Kagoshima Pref. Ins. Agri. Dev.)

15:48 3Gp13 Investigation of polyamines distribution in moldy cheese using mass spectrometry imaging
····· ○Soichiro Ikuta[1,2], Shinsuke Fujiwara[1,2] ([1] Grad. Sch. Sci. Technol., Kwansei Gakuin Univ., [2] Sch. Biological Environmental Sci., Kwansei Gakuin Univ.)

16:00 3Gp14 Comparison of malodor-responsive odorant receptors among animal species
····· ○Yosuke Fukutani, Reina Kanemaki, Haruka Saito, Mei Saito, Masafumi Yohda
(Grad. Sch. Eng., Tokyo Univ. Agric. Technol.)

16:12 3Gp15 Increase in antioxidant ability of antioxidants upon inclusion in beta-1,3-1,6-glucan nanoparticles
····· ○Shoma Kannan, Nanako Doi, Kazuya Koumoto (FIRST, Konan Univ.)

16:24 3Gp16 Beverage evaluation using cell-sized liposomes made from phospholipids on microscopic observation
····· ○Tsuyoshi Yoda (AITC, Ind. Res. Inst.)

Room H ES024 (13:00–16:36)

【Fermentation Physiology, Fermentation Technology; Omics Technology; Metabolic Engineering】

13:00 3Hp01 Metagenomic analysis of metabolic communities in complex microbiota of "Nukadoko"
····· ○Yuri Koga[1], Akari Shinoda[1], Shunsaku Sugiura[2], Hiroshi Kimura[3], Jiro Nakayama[1]
([1] Grad. Sch. Bioresour. Bioenviron. Sci., Kyushu Univ., [2] Pickle Funct. Lab., Tokai Pickles Co., [3] Kitakyushu Kokura Nukadoko Nukadaki Study Group)

13:12 3Hp02 Spatial transcriptome technology to detect single nucleotide variants
····· ○Soichiro Asami, Reza Kalhor (Dept. Biomed. Eng., Sch. Med.)

13:24 3Hp03 Transcriptome analysis in beetle larval enlargement by feeding on thermophilic fermentation
····· ○Futo Asano, Taira Miyahara, Hiroaki Kodama (Fac. Horticul., Chiba Univ.)

13:36 3Hp04 Expression of Delta-rhodopsin on yeast vacuolar membrane for improvement of energy utilization efficiency and application to bioproduction
····· ○Kaoru Daicho, Yoko Hirono, Hiroshi Kikukawa, Kentaro Tamura, Kiyotaka Hara
(Grad. Sch. Integr. Pharm. Nutr. Sci., Univ. Shizuoka)

13:48 3Hp05 Applications of a light-driven proton pump to enhance the weak acid tolerance and bioproduction in *Escherichia coli*

····· ○Yuma Kobayashi [1], Mikoto Sano [1], Yoko Hirono [2], Fumio Matsuda [1], Jun Ishii [3], Kiyotaka Hara [2], Hiroshi Shimizu [1], Yoshihiro Toya [1]

([1] Grad. Sch. IST, Osaka Univ., [2] Sch. Food Nutr. Sci., Univ. Shizuoka., [3] EGBRC, Kobe Univ.,)

14:00 Break

14:12 3Hp06 Identification of a novel NADPH regeneration reaction using a fluorescence sensor in *Escherichia coli*

····· Koichiro Ueno, Shogo Sawada, Mai Ishibashi, Yoshiki Kanda, ○Yoshihiro Toya, Hiroshi Shimizu (Grad. Sch. IST, Osaka Univ.)

14:24 3Hp07 Development of metabolic flux repression technology targeting multiple enzymes based on optogenetics

····· ○Shota Sakurai, Yoshihiro Toya, Hiroshi Shimizu (Grad. Sch. IST, Osaka Univ.)

14:36 3Hp08 Optogenetic regulation of metabolic flux distribution by irradiating multicolor lights in *Escherichia coli*

····· ○Hayato Akagi, Hiroshi Shimizu, Yoshihiro Toya (Grad. Sch. IST, Osaka Univ.)

14:48 3Hp09 Application of optogenetic metabolic flux control for 1,3-propanediol production in Escherichia coli

····· ○Suwa Kawanishi, Shota Sakurai, Masashi Tsukamoto, Hiroshi Shimizu, Yoshihiro Toya (Grad. Sch. IST, Osaka Univ.)

15:00 3Hp10 Analysis on the regulatory mechanism of expression of the sulfate assimilation pathway gene clusters in the thermophilic and hydrogen-oxidizing bacterium *Hydrogenobacter thermophilus*

····· ○Yasuhide Asano [1], Masafumi Kameya [1,2], Hiroyuki Arai [1,2], Masaharu Ishii [1,2]

([1] Grad. Sch. Agric. Life Sci., Univ. Tokyo, [2] CRIIM, Univ. Tokyo)

15:12 Break

15:24 3Hp11 Screening of genes and promoters activating bioflocculant production in *Citrobacter* spp.

····· ○Ryota Kuribayashi, Mana Morishige, Hidehiro Ishizawa, Masahiro Takeo (Grad. Sch. Eng., Univ. Hyogo)

15:36 3Hp12 Screening for multicopy suppressors of 2-deoxyglucose sensitivity of pyruvate decarboxylase mutant in *Saccharomyces cerevisiae*

····· ○Wataru Nomura, Mayu Kubota, Ryusei Uda, Yoshiharu Inoue (Grad. Sch. Agric., Kyoto Univ.)

15:48 3Hp13 Development of a method to analyze the proteins associated with the autonomous central dogma

····· ○Chisato Nishizawa [1], Shunsuke Aburaya [2], Yuishin Kosaka [1,3], Kenji Sugase [1], Wataru Aoki [4,5,6]

([1] Grad. Sch. Agric., Kyoto Univ., [2] Med. Inst. Bioreg., Kyushu Univ., [3] Japan Society for the Promotion of Science, [4] Grad. Sch. Eng., Osaka Univ., [5] JST FOREST, [6] KIST-BIC)

16:00 3Hp14 Cysteine redox proteomic analysis under different potential environments

····· ○Kenya Tanaka [1,2], Akihiko Kondo [1,2,3,4], Tomohisa Hasunuma [1,2,3]

([1] EGBRC, Kobe Univ.,, [2] Grad. Sch. Sci. Technol. Innov., Kobe Univ., [3] CSRS, RIKENS, [4] Grad. Sch. Eng, Kobe Univ.)

16:12 3Hp15 Effect of yeast extract on the growth of lactic acid bacteria

····· ○Yuki Saito, Misa Tomitaka, Tadayoshi Katsumata, Koshiro Futada, Yuki Tawada, Kazuhiro Fukano, Zhe Zhou

(Mitsubishi Corporation Life Sciences Ltd.)

16:24 3Hp16 ADC58, an antibiotic that selectively kills *Pseudomonas aeruginosa* was discovered from nematode symbiont *Photorhabdus khanii*

····· ○Yu Imai [1,2], Sangkeun Son [2], Libang Liang [2], Michael Gates [2], Miho Mori [2], Meghan Ghiglieri [2], Chandrashekhar Honrao [3], Xiaoyu Ma [3], Jason Guo [3], Kim Lewis [2]

([1] Inst. Biomed. Sci., Shinshu Univ., [2] Antimicrobial Discov. Cent., Northeastern Univ., [3] Cent. for Drug Discov., Northeastern Univ.)

Room I ES025 (13:00–16:00)

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

13:00 3Ip01 Real-time NMR analysis of polyhydroxyalkanoate synthase reaction that synthesizes block copolymer comprising glycolate and 3-hydroxybutyratev

····· ○Kengo Yanagawa [1], Ayaka Kajikawa [1], Sayaka Sakakibara [1], Hiroyuki Kumeta [3], Hiroya Tomita [4], Kenichiro Matsumoto [2]

([1] Grad. Sch. Chem. Sci. Eng., Hokkaido Univ., [2] Grad. Sch. Eng., Hokkaido Univ., [3] Faculty of Advanced Life Science, [4] ICBiotech, Osaka Univ.)

13:12 3Ip02 Electrochemical determination variants of SARS-CoV-2 receptor binding domain with molecularly imprinted polymer-coated electrodes

····· ○Zhuo-Jun An [1], Cheng-Chih Lin [1,2], Mei-Hwa Lee [3], Chuen-Yau Chen [1], Hung-Yin Lin [1]

([1] National University of Kaohsiung, [2] Zuoying Branch Kaohsiung Armed Forces General Hosp., [3] IShou Univ.)

13:24 3Ip03 Antifungal activity of a ginger's pungent ingredient, 6-shogaol, in combination with ethanol and its mechanism

····· ○Momoko Tamura [1], Yoshihiro Yamaguchi [1], Akira Ogita [1,2], Ken-ichi Fujita [1]

([1] Grad. Sch. Sci., Osaka Metro. Univ., [2] Res. Center. Urban Health Sports, Osaka Metro. Univ.)

13:36 3Ip04 Persimmon tannin promotes the growth of *Saccharomyces cerevisiae* under ethanol stress

····· ○ Ilhamzah [1], Yoshihiro Yamaguchi [1], Akira Ogita [1,2], Ken-ichi Fujita [1]

([1] Grad. Sch. Sci., Osaka Metro. Univ., [2] Res. Center. Urban Health Sports, Osaka Metro. Univ.)

13:48 3Ip05 Inhibition of mitochondrial fusion and fission by addition of microtubule polymerization inhibitors in budding yeast

····· ○Wakae Murata [1,2], Yuni Yamase [1], Yoshihiro Tmaguchi [2], Akira Ogita [2,3], Ken-ichi Fujita [2]

([1] Yonago Natl. Coll. Technol., [2] Grad. Sch. Sci., Osaka Metro. Univ., [3] Res. Center. Urban Health Sports, Osaka Metro. Univ.)

14:00 Break

14:12 3Ip06 Functional modification of flavin-containing monooxygenase through machine learning methodology

····· ○Takuma Matsushita [1], Yutaka Saito [2,3,4], Shinji Kishimoto [1], Kenji Watanabe [1]

([1] Dept. Pharm., Univ. Shizuoka, [2] AIST, [3] Univ. Tokyo, [4] Kitasato Univ.)

14:24 3Ip07 Identification and characterization of non-ribosomal peptide synthesis operon for bacillomycin L biosynthesis in *Bacillus velezensis* TCG15

····· ○Kojiro Ito [1], Shun Tomita [2], Takahiro Fujimaki [3], Minenosuke Matsutani [4], Moe Gunji [3], Mayu Miwa [3], Sizunobu Igimi [3], Akinobu Kajikawa [3], Kenji Yokota [3]

([1] Grad. Appl. Biosci., Tokyo Univ. Agric., [2] BPRI, AIST, [3] Fac. Appl. Biosci., Tokyo Univ. Agric., [4] NODAI Genome Res. Center., Tokyo Univ. Agric.)

14:36 3Ip08 Development of a screening technique for microbial secondary metabolites by using Raman spectroscopy

····· ○Shunnosuke Suwa [1,3], Masahiro Ando [2], Takuji Nakashima [2], Shumpei Horii [1,3], Atsuko Matsumoto [2], Toyoaki Anai [4], Haruko Takeyama [1,2,3,5]

([1] Grad. Sch. Adv. Sci. Eng., Waseda Univ., [2] Res. Org. Nano Life Innov., [3] CBBD-OIL, AIST-Waseda Univ., [4] Grad. Sch. Agric., Kyushu Univ., [5] Inst. Adv. Res. Biosyst. Dyn., Waseda Res. Inst. Sci. Eng., Waseda Univ.)

14:48 3Ip09 Purification and analysis of antibacterial substance produced by *Streptomyces* sp. TSP2-12 strain

····· ○Ryusei Tsurugai, Hironobu Otsuchi, Takatoshi Jounai, Hayato Tsukagoshi, Misaki Nakajima, Masahide Ishikawa, Masakazu Iwasaki, Yuji Hatada

(Fac. Eng.,Saitama Inst. Technol)

15:00 3Ip10 Activation of cryptic secondary metabolite biosynthesis in bamboo suspension cells by an epigenetic modifier
……Taiji Nomura, ○Yasuo Kato (Biotechnol. Res. Center, Toyama Pref. Univ.)

15:12 Break

15:24 3Ip11 Isolation and characterization of Anti-Glycation substances from *Calophyllum inophyllum* leaf extracts.
…… ○Ryuta Kagami [1], Ami Matsui [1], Toru Usami [2], Tetsuya Matsukawa [1], Shinichiro Kajiyama [1]
([1] Grad. Sch. Biology-Oriented Sci. Technol., Kindai Univ., [2] Sumaeco Co.Ltd , Okinawa, Japan)

15:36 3Ip12 Autotrophic biosynthesis of biodegradable polyhydroxyalkanoate from continuously supplying non-combustible gas mixture by hydrogen-oxidizing bacteria
……○Chih Ting Wang, Yuki Miyahara, Manami Ishii-Hyakutake, Takeharu Tsuge (Tokyo Tech)

15:48 3Ip13 Biosynthesis of polyhydroxyalkanoate copolymers containing alpha-carbon methylated monomer units by constructing an artificial metabolic pathway
…… ○Yuki Miyahara, Marii Ishino, Takeharu Tsuge (Sch. Mater. Chem. Technol., Tokyo Tech)

Room K Okuma Lecture Room 2F (13:00–16:12)

【Genetic Engineering】

13:00 3Kp01 Enhancement of stress tolerance in *Escherichia coli* by small HSP20 from thermotolerant bacteria
…… ○Yu Sato [1], Kenji Okano [2], Kohsuke Honda [3,4]
([1] ORI, Yamaguchi Univ., [2] Fac. Chem. Mater. Bioeng., Kansai Univ., [3] ICBiotech, Osaka Univ., [4] OTRI, Osaka Univ.)

13:12 3Kp02 Development of novel *Escherichia coli-Thermus thermophilus* shuttle vectors
……○Sora Murayama [1], Kentaro Miyazaki [1], Hiroya Tomita [1,2], Kohsuke Honda [1,2]
([1] ICBiotech, Osaka Univ., [2] OTRI, Osaka Univ.)

13:24 3Kp03 Exploring culture conditions for activating an formate assimilation pathway in Escherichia coli
…… ○Keitaro Tatsumi, Yuma Kobayashi, Yoshihiro Toya, Hiroshi Shimizu (Grad. Sch. IST, Osaka Univ.)

13:36 3Kp04 Modular design of *Escherichia coli* for ferulic acid biosynthesis from spent coffee ground (SCG)
……○Sefli Sri Wahyu Effendi, I-Son Ng (Dept. Chem. Eng., Coll. Eng., Natl. Cheng Kung Univ.)

13:48 3Kp05 Effect of recombinant expression of plasmalogen synthase on the growth of *Escherichia coli*
……○Yui Otaki [1], Meme Hasegawa [1], Akiko Kashiwagi [2], Megumi Nishimukai [1], Miwa Yamada [1]
([1] Dept. Biolog. Chem. Food sci. Iwate Univ., [2] Fac. Agric. Life Sci., Hirosaki Univ.)

14:00 Break

14:12 3Kp06 Effect of codon optimization on protein expression
……○Shuhei Kamata, Hirokazu Takahashi, Yoshiko Okamura (Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)

14:24 3Kp07 Construction of high expression system for heterologous proteins using acetic acid bacteria as a host
…… ○Yuya Tanakura [1], Soichiro Ikuta [1,2], Hengning Wu [3], Kiyoshi Yasukawa [4], Itaru Yanagihara [3], Shinsuke Fujiwara [1,2]
([1] Grad. Sch. Sci. Technol., Kwansei Gakuin Univ.,
[2] Sch. Biological Environmental Sci., Kwansei Gakuin Univ.,
[3] Dept. Dev. Med., Osaka Women's and Children's Hospital., [4] Grad. Sch. Agric., Kyoto Univ.)

14:36 3Kp08 Cloning and characterization of polyhydroxyalkanoate synthase gene from *Cobetia* sp. IU 180733 JP01 (5-11-6-3) isolated from marine environments
……○Takuma Ishida, Yuki Umebayashi, Miwa Yamada (Dept. Biolog. Chem. Food sci. Iwate Univ.)

14:48 3Kp09 Construction of an error-prone thermophile that enhances mutations by medium additives
····· ○Hirokazu Suzuki [1,2], Taiga Hattori [3], Takashi Ohshiro [1,2]
([1] Fac. Eng., Tottori Univ., [2] GSC, Tottori Univ., [3] Dept. Eng., Grad. Sch. Sust. Sci., Tottori Univ.)

15:00 3Kp10 Functional analysis on a TrypY homolog in a hyperthermophilic archaeon
····· Taku Horikawa [1], Yasuyuki Yamamoto [1], Sung-Jae Lee [2], Naomichi Takemata [1], ○Tamotsu Kanai [1,3], Haruyuki Atomi [1]
([1] Grad. Sch. Eng., Kyoto Univ., [2] Col. Sci., Kyung Hee Univ., [3] Fac. Eng., Toyama Pref. Univ.)

15:12 Break

15:24 3Kp11 Regulation of monomer composition of the polyhydroxyalkanoate terpolymer by metabolic engineering of central pathway for utilization of C_1 compounds in methylotrophic bacterium
····· So Tsuruta, ○Izumi Orita, Toshiaki Fukui (Sch. Life Sci. Technol, Tokyo Tech)

15:36 3Kp12 Analyses of *Methylorubrum extorquens* mutant strains with high methanol tolerance obtained by adaptive laboratory evolution
····· ○Tsuneyoshi Chiba, Izumi Orita, Toshiaki Fukui (Sch. Life Sci. Technol, Tokyo Tech)

15:48 3Kp13 Biosynthesis of PHA with unsaturated side-chain monomer using genetically-engineered *Ralstonia eutropha*
····· ○Allan Devanadera, Izumi Orita, Toshiaki Fukui (Sch. Life Sci. Technol, Tokyo Tech)

16:00 3Kp14 Biosynthesis of SCL-MCL polyhydroxyalkanoate copolymers from soybean oil using engineered *Ralstonia eutropha* expressing mutant PHA synthase from *Pseudomonas* sp. 61-3
····· ○Ares Arrad, Satoshi Akechi, Izumi Orita, Toshiaki Fukui (Sch. Life Sci. Technol, Tokyo Tech)

Room L 121 (Engineering Building #1) (13:00–16:36)

【Biochemical Engineering; Cell Culture Engineering; Cell Culture Engineering】

13:00 3Lp01 Production of 2,5-pyridinedicarboxylic acid from glucose using *Corynebacterium glutamicum*
····· ○Kyoshiro Nonaka, Tatsuya Osamura, Fumikazu Takahashi, Shingo Koyama (Kao Corp.)

13:12 3Lp02 (Withdrawn)

13:24 3Lp03 Eicosapentaenoic acid production by marine bacterium *Shewanella woodyi*
····· ○Fumiaki Sobue, Ryoutarou Mitsumasu, Hiroaki Yamasaki (DIC)

13:36 3Lp04 High arabitol-producing yeast, *Zygosaccharomyces* sp. Gz-5 isolated from miso and its arabitol production
····· Rikuo Kanokozawa [1], ○Kan Iwata [1], Aoi Iwata [1], Mayumi Maeda [2], Kenji Maehashi [1], Jun Yoshikawa [1]
([1] Grad. Sch. Agric., Tokyo Univ. Agric., [2] Fac. Appl. Biosci., Tokyo Univ. Agric.)

13:48 3Lp05 Development of production method of Carnosine by bioprocess
····· ○Ayumu Kuramoto [1,3], Kuniki Kino [1,2], Kenichiro Sato [3], Yukio Okada [3]
([1] Res. Inst. Sci. Eng., Waseda Univ., [2] Sch. Adv. Sci. Eng., Waseda Univ., [3] Tokai Bussan Ltd.)

14:00 Break

14:12 3Lp06 Engineering *Escherichia coli* for high production of tyrosol from phenylalanine
····· ○Ning Shen [1], Yasuharu Satoh [2], Daisuke Koma [3], Yasushi Ogasawara [2], Tohru Dairi [2]
([1] Grad. Sch. Chem. Sci. Eng., Hokkaido Univ., [2] Grad. Sch. Eng., Hokkaido Univ., [3] ORIST)

14:24 3Lp07 Agitation effect of liquid spreading device with small power input on biodiesel fuel production using liquid enzymes
····· ○Shinji Hama [1], Kensuke Matsuura [1], Chiaki Ogino [3], Tadahiro Mukaida [2], Hideo Noda [1,2]
([1] Bio-energy Corp., [2] Kansai Chemical Engineering Co., Ltd., [3] Grad. Sch. Eng, Kobe Univ.)

14:36 3Lp08 Molecular breeding of *Cupriavidus necator* to synthesize transparent biodegradable plastics
····· ○Mahiro Itakura [1], Shirosa Miyahara [2], Kenji Tanaka [3], Seiichi Taguchi [4], Hiromi Matsusaki [1,2]
([1] Grad. Sch. Environ. Sym. Sci., Pref. Univ. Kumamoto, [2] Fac. Environ. Sym. Sci., Pref. Univ. Kumamoto, [3] Fac. Humanity-Oriented Sci., Eng., Kindai Univ., [4] Grad. Sch. Sci. Technol. Innov., Kobe Univ.)

14:48 3Lp09 Metabolic design of monomer supplying pathway for effective production of lactate-based polyester in *Cupriavidus necator*
····· ○Sangho Koh [1], Sho Furutate [2], Shunsuke Sato [2], Seiichi Taguchi [1]
([1] Grad. Sch. Sci. Technol. Innov., Kobe Univ., [2] Kaneka Corp.)

15:00 3Lp10 Effect of protease B gene disruption on the stability of extracellular biodegradable plastic-degrading enzyme in the basidiomycetous yeast *Pseudozyma antarctica*
····· ○Yuka Sameshima-Yamashita [1], Natsuki Omae [2], Tomotake Morita [2], Hiroko Kitamoto [1]
([1] NIAES/NARO, [2] AIST)

15:12 Break

15:24 3Lp11 Elucidation of the mechanism of poly-gamma-L-glutamic acid (gamma-L-PGA) synthesis in *Bacillus subtilis*
····· ○Rina Nogami, Junya Yamamoto, Yoshino Uda, Ken-ichi Yoshida, Shu Ishikawa
(Grad. Sch. Sci. Technol. Innov., Kobe Univ.)

15:36 3Lp12 Investigation of cultivation conditions to enhance glycolate (GL) fraction in GL-based polymers synthesized by recombinant *Escherichia coli* from ethylene glycol
····· ○Yosuke Ota [1], Miwa Yamada [2] ([1] Grad. Sch. Agric., Iwate Univ., [2] Fac. Agric., Iwate Univ.)

15:48 3Lp13 High density culture of lactic acid bacteria by aerobic fed-batch culture
····· Ryou Ichinose [2], Shino Yamasaki-Yashiki [1], ○Yoshio Katakura [1]
([1] Fac. Chem. Mater. Bioeng., Kansai Univ., [2] Grad. Sch. Sci. Eng., Kansai Univ.)

16:00 3Lp14 Development of semi-synthetic medium to reduce the cost of the natural medium YPD for yeast culture
····· ○Haruka Hirakawa [1], Hisashi Hoshida [2], Rinji Akada [2]
([1] Grad. Sch. Sci. Tech. Innov., Yamaguchi Univ., [2] Fac. Eng., Yamaguchi Univ.)

16:12 3Lp15 Effect of sugars derived from saccharified liquid of defatted-rice bran for lipid production by using oleaginous yeast and its fatty acid composition.
····· ○Taiki Hikosaka, Masanori Watanabe (Grad. Sch. Agric., Yamagata Univ.)

16:24 3Lp16 Methanol synthesis using the biocatalyst with high enzyme expression for methane conversion
····· ○Akimitsu Miyaji (Sch. Mater. Chem. Technol., Tokyo Tech)

Room M 131 (Engineering Building #1) (13:00–16:36)

【Biochemical Engineering; Cell Culture Engineering; Bioprocess Engineering】

13:00 3Mp01 Sulfated Peptide Synthesis Using Genetically Modified Microorganism
····· ○Yuuki Ikeda, Katsuhisa Kurogi, Yoichi Sakakibara (Fac. Agric., Univ. Miyazaki)

13:12 3Mp02 Analysis of the adsorption properties of lactoferrin-fused single-chain antibodies on nitrocellulose and evaluation of their antigen-binding activity.
····· ○Makoto Nita [1], Souta Sasaoka [2] ([1] Grad. Sch. Sci. Technol., Kyoto Inst. Technol., [2] Sch. Sci. Technol., Kyoto Inst. Technol.)

13:24 3Mp03 Selective Concentration of Cholesterol Absorption Inhibitory Peptides Using Heat-treated Silica Gel
····· ○Momoha Iriyama, Hitomi Hagawa, Hirokazu Akiyama, Kazunori Shimizu, Hiroyuki Honda
(Grad. Sch. Eng., Nagoya Univ.)

13:36 3Mp04 Development of biological utilization with carbon materials
····· ○Naotaka Yamamoto [1], Naoki Matoba [2], Tomoya Okino [2], Akihito Nakanishi [1,3]
([1] Grad. Sch. Bionics Comput. Media Sci., Tokyo Univ. Technol., [2] Kansai Coke and Chemicals Co., Ltd., [3] Sch. Biosci. Biotechnol., Tokyo Univ. Technol.)

13:48 3Mp05 Mesoporous particles with antiviral properties
····· ○Rie Hirao, Keisuke Shigetoh, Shinji Inagaki, Nobuhiro Ishida (Toyota Cent. R&D Labs. Inc.)

14:00 Break

14:12 3Mp06 Effects of heat treatment on cell structure and enzyme retention of psychrophile-based simple biocatalyst
····· ○Kota Anada, Takahisa Tajima, Akiko Hida, Junichi Kato
(Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)

14:24 3Mp07 Development of a gas control system via the ventilation capacity of shake bottle for microbial cultivations
····· ○Masato Takahashi, Hideki Aoyagi (Inst. Life Environ. Sci., Univ. Tsukuba)

14:36 3Mp08 Determination of mixing time in fermentation of an *Aspergillus oryzae* hyphal dispersed mutant
····· ○Shunya Susukida [1], Kiyoaki Muto [1], Hikaru Ichikawa [1], Ken Miyazawa [1], Akira Yoshimi [2,3], Yoshikazu Kato [4], Keietsu Abe [1,3]
([1] Grad. Sch. Agric. Sci., Tohoku Univ., [2] Grad. Sch. Agric., Kyoto Univ., [3] NICHe, Tohoku Univ., [4] Satake Multimix Corp.)

14:48 3Mp09 Characterization of cultures with *Saccharomyces* yeast using MAXBLEND(R) reactor
····· ○Yoshiro Ikeya [1], Hiroo Horiguchi [1], Aya Tanaka [1], Prihardi Kahar [2], Chiaki Ogino [2], Katsuhide Takenaka [1]
([1] Sumitomo Heavy Industries Process Equipment Co.,Ltd., [2] Grad. Sch. Eng, Kobe Univ.)

15:00 3Mp10 A novel inverse membrane bioreactor for methane/methanol gas-to-liquid bioconversion using a microbial gas-phase reaction
····· ○Yan-Yu Chen, Ishikawa Masahito, Katsutoshi Hori (Grad. Sch. Eng., Nagoya Univ.)

15:12 Break

15:24 3Mp11 Technical evaluation of cell culture beginners using two-angle videos of culture work
····· ○Ken Kataoka [1], Kokoro Kawashima [1], Nanami Goya [1], Hisashi Tomie [1], Mano Soshi [2]
([1] Fac. Sci., Okayama Univ. Sci., [2] BonBon Inc.)

15:36 3Mp12 Prediction of culture phase of Saccharomyces cerevisiae using image analysis technology
····· ○Ryoya Nakakura [1], Tai-Yang Chiou [2], Masaaki Konishi [2] ([1] Grad. Sch. Eng., Kitami Inst. Technol., [2] Kitami Inst. Technol.)

15:48 3Mp13 Identification of colony-forming inhibitors in agar using *Escherichia coli oxyR* mutant
····· ○Jin Sakamoto [1,2], Ryoko Asada [1,3], Masakazu Furuta [1,3], Tetsuaki Tsuchido [1]
([1] Microorganisms Cntr. Res. Ctr., Osaka Metro. Univ., [2] Fac. Chem. Mater. Bioeng., Kansai Univ., [3] Grad. Sch. Eng., Osaka Metro. Univ.)

16:00 3Mp14 A simple method for the creation of a bacteria-sized unilamellar liposome with different proteins localized to the respective sides of the membrane
····· ○Kosaku Noba [1], Shogo Yoshimoto [1], Yoshikazu Tanaka [2], Takeshi Yokoyama [2], Tomoaki Matsuura [3], Katsutoshi Hori [1]
([1] Grad. Sch. Eng., Nagoya Univ., [2] Grad. Sch. Life Sci., Tohoku Univ., [3] Tokyo Tech)

16:12 3Mp15 Downsizing of AtaA from *Acinetobacter* sp. Tol 5 and its application in immobilizing *Escherichia coli*
····· ○Shogo Yoshimoto [1], Sota Aoki [1], Yuki Ohara [1], Masahito Ishikawa [2], Atsuo Suzuki [1], Dirk Linke [3], Andrei Lupas [4], Katsutoshi Hori [1]
([1] Grad. Sch. Eng., Nagoya Univ., [2] Dept. Biosci., Nagahama Inst. Bio-Sci. Technol., [3] Dept. Biosci., Univ. Oslo, [4] Dept. Protein Evol, Max Planck Inst. Biol.)

16:24 3Mp16 Evaluation studies on virus inactivation technology that can be introduced into the manufacturing process of pharmaceutical products using UVC-LED
····· ○Kazuya Segawa, Takamasa Inoue, Yugo Nishiguchi, Takeru Urayama
(Japan Blood Products Organization)

Room N 132 (Engineering Building #1) (13:00–16:36)

【Bioremediation; Environmental Technology, Wastewater Treatment; Biomass, Bioresource and Energy Engineering】

13:00 3Np01 Elucidation of the boric acid-mediated infection mechanism in *Pseudmonas syringae* pv. *tabaci* 6605
····· ○Kotaro Fujikawa, Akiko Hida, Takahisa Tajima, Junichi Kato
(Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)

13:12 3Np02 Study on chemotaxis of *Leifsonia* sp.
····· ○Naomi Nakagawa, Akiko Hida, Takahisa Tazima, Junichi Kato
(Grad. Sch. Integr. Sci. Life, Hiroshima Univ.)

13:24 3Np03 Studies on the control of bacterial wilt by fermented botanical product
····· ○Chika Tadokoro [1], Akiko Hida [1], Hideto Torii [2], Kohei Takenaka [2], Kotaro Fujioka [2], Shinsuke Kishida [2], Junichi Kato [1]
([1] Grad. Sch. Integr. Sci. Life, Hiroshima Univ., [2] Manda Fermentation)

13:36 3Np04 Suppression of *Plasmodiophora brassicae* using organic materials
····· ○Kosuke Hirano, Quoc Thinh Tran, Motoki Kubo (Grad. Sch. Life Sci., Ritsumeikan Univ.)

13:48 3Np05 Isolation of plant growth-promoting rhizobacteria mutant with high resistance to hostile environment
····· ○Fathiah Rizky Kosasih [1,2], Kentaro Miyazaki [1], Hiroya Tomita [1,3], Kohsuke Honda [1,3]
([1] ICBiotech, Osaka Univ., [2] PT Pupuk Sriwidjaja Palembang-Indonesia, [3] OTRI, Osaka Univ.)

14:00 Break

14:12 3Np06 Ultilization of wood biomass for constructing new organic soil
····· ○Yuki Tamada, Quoc Thinh Tran, Motoki Kubo (Grad. Sch. Life Sci., Ritsumeikan Univ.)

14:24 3Np07 Advancement through analysis of mineral composition of compost
····· ○Kohei Kamitani, Quoc Thinh Tran, Motoki Kubo (Grad. Sch. Life Sci., Ritsumeikan Univ.)

14:36 3Np08 Study on properties of organic fertilizer in Japan
····· ○Yihao Huang, Quoc Thinh Tran, Motoki Kubo (Grad. Sch. Life Sci., Ritsumeikan Univ.)

14:48 3Np09 Study on improvement of soil fertility by using organic fertilizers
····· ○Tomoya Onishi, Thinh Tran Quoc, Motoki Kubo (Grad. Sch. Life Sci., Ritsumeikan Univ.)

15:00 3Np10 Biostimulant production by *Saccharomyces cerevisiae* using spent coffee grounds extract
····· ○Natsuki Kawachi [1], Hiroshi Takagi [2], Yoko Hirono [1], Hiroshi Kikukawa [1], Kiyotaka Hara [1]
([1] Grad. Sch. Integr. Pharm. Nutr. Sci., Univ. Shizuoka,
[2] Numazu Technical Support Center Industrial Research Institute of Shizuoka Prefecture)

15:12 Break

15:24 3Np11 Photothermal Applications of Spent Coffee Grounds
····· ○Chien Hsiu-Wen (National Kaohsiung University of Science and Technology)

15:36 3Np12 Biostimulant effect of chlorella residue for plant growth and soil fertility
····· ○Asuka Okazaki, Motoki Kubo, Quoc Thinh Tran (Grad. Sch. Life Sci., Ritsumeikan Univ.)

15:48 3Np13 Effects of microalgae liquid as a biostimulant on plant growth
····· ○Wakana Okimoto, Quoc Thinh Tran, Motoki Kubo (Grad. Sch. Life Sci., Ritsumeikan Univ.)

16:00 3Np14 Enzyme production through solid state fermentation using bamboo
····· ○Maya Sunami [1], Chizuru Sasaki [2], Kazuo Matsuura [3], Takeshi Omasa [4]
([1] Grad. Sch. Sci. Technol, Tokushima Univ., [2] Grad. Sch. Biosci. Bioind, Tokushima Univ.,
[3] NanoMist Technologies Co., Ltd., [4] Grad. Sch. Eng., Osaka Univ.)

16:12 3Np15 Characterization of metabolites from *Bacillus sp.* A13 that inhibit biofilm formation in *Pseudomonas aeruginosa*.
····· ○Shobu Hachimata [1], Yoshinobu Matsumura [2,3] ([1] Grad. Sch. Sci. Eng., Kansai Univ.,
[2] Fac. Chem. Mater. Bioeng., Kansai Univ., [3] ORDIST. Kansai Univ.)

16:24 3Np16 Toward Net-Zero agrifood industrial cycle through insect-based biorefinery
……◯Yu-Shen Cheng [1,2] ([1] Dept. Chem. & Mater. Eng., Coll. Eng., Nat'l Yunlin U. Sci. Tech., [2] Coll. Future., Nat'l Yunlin U. Sci. Tech.)

Room O 142 (Engineering Building #1) (13:00–16:36)

【Biomass, Bioresource and Energy Engineering】

13:00 3Op01 Selective production of aromatic compounds from lignin (II): Application of the enzymes for acetovanillone catabolism from *Pseudomonas* sp. MHK4 to vanillate production.
……◯Shu Iriyama [1], Mami Kamada [2], Yui Masui [1], Yudai Higuchi [2], Saori Ozeki [2], Chiho Sakamoto [2], Naofumi Kamimura [3], Eiji Masai [3], Tomonori Sonoki [2]
([1] Grad. Sch. Agric. Life Sci., Hirosaki Univ., [2] Fac. Agric. Life Sci., Hirosaki Univ., [3] Dept. Mater. Sci. Bioeng., Nagaoka Univ. Technol.)

13:12 3Op02 Selective production of aromatic compounds from lignin (III): An engineered bacterial strain that produces vanillate from a mixture of aromatic compounds derived from bagasse organosolv lignin.
……◯Kanami Muraki [1], Mami Kamada [1], Saori Ozeki [1], Kazuma Ikeda [1], Naoya Kodama [2], Hiroya Ishimaru [3], Yudai Higuchi [1], Takuya Yoshikawa [4], Akihiro Yoshida [5], Naofumi Kamimura [6], Eiji Masai [6], Yuta Nakasaka [3], Takao Masuda [3], Tomonori Sonoki [1]
([1] Fac. Agric. Life Sci., Hirosaki Univ., [2] Grad. Sch. Agric. Life Sci., Hirosaki Univ., [3] Grad. Sch. Eng., Hokkaido Univ., [4] Div. Environ. Agric. Eng., Obihiro Univ. Agric. Vet. Med., [5] Inst. Regional Innovation, Hirosaki Univ., [6] Dept. Mater. Sci. Bioeng., Nagaoka Univ. Technol.)

13:24 3Op03 Selective production of aromatic compounds from lignin (IV): Identification of an effective mutation for the development of a bacterial strain that produces vanillate from bagasse organosolve lignin.
……◯Kazuma Ikeda [1], Naoya Kodama [2], Kanami Muraki [1], Zen Okawa [3], Yudai Higuchi [1], Naofumi Kamimura [3], Eiji Masai [3], Tomonori Sonoki [1]
([1] Fac. Agric. Life Sci., Hirosaki Univ., [2] Grad. Sch. Agric. Life Sci., Hirosaki Univ., [3] Nagaoka Univ. Technol.)

13:36 3Op04 Enrichment of halotolerant hydrogen-oxidizing bacteria and production of high-value-added hydroxyectoine using a hybrid biological inorganic system
……◯Xiang Feng [1], Daichi Kazama [1], Sijia He [1], Hideki Nakayama [2], Kozo Sato [1], Hajime Kobayashi [1]
([1] Grad. Sch. Eng., Univ. Tokyo, [2] Grad. Sch. Fish. Sci. Environ. Stud., Nagasaki Univ.)

13:48 3Op05 Production of succinic acid from paper sludge using *Rhizopus* fungus
……◯Mika Kaiya, Maki Moriwaki (Grad. Sch. Sci. Eng., Univ. Toyama)

14:00 Break

14:12 3Op06 Utilization of nipa sap as inexpensive nutrient source for *Moorella thermoacetica* (f. *Clostridium thermoaceticum*)
……Nguyen Dung Van, ◯Harifara Rabemanolontsoa (Grad. Sch. Energy Sci., Kyoto Univ.)

14:24 3Op07 Improvement of yeast adsorption performance for heavy metal ions in aqueous solution by sulfate modification
……◯Kokoro Yamada, Yoshihiro Ojima, Masayuki Azuma (Grad. Sch. Eng., Osaka Metro. Univ.)

14:36 3Op08 Evaluations of functions of intracellular contents as matrices in cell-plastic formation
……◯Shintaro Nemoto [1], Kouhei Iritani [2], Akihito Nakanishi [1,3]
([1] Grad. Sch. Bionics Comput. Media Sci., Tokyo Univ. Technol., [2] Sch. Engr. Tokyo Univ. Technol., [3] Sch. Biosci. Biotechnol., Tokyo Univ. Technol.)

14:48 3Op09 Development of a photocatalytic mesh microalgae biorefinery (PMMB) system for sustainable biomass conversion

……◯Yingnan Yang, Cheng Zhang, Guangqi An (Grad. Sch. Life Environ. Sci., Univ. Tsukuba)

15:00 3Op10 Sedimentation mechanism of microalgae particles in a closed raceway pond (Influence of streamwise vortices caused by a paddle rotation)

…… ◯Kaito Morino [1], Yoshiaki Ueda [2], Yusuke Sakai [3], Ryunosuke Osaka [3]
([1] Grad. Sch. Sci. Eng., Setsunan Univ., [2] Setsunan Univ., [3] Kumagai Gumi Co., Ltd.)

15:12 Break

15:24 3Op11 Lipid production by *Lipomyces starkeyi* using a two-stage continuous feeding strategy with a synthetic medium

…… ◯Chih Chan Wu [1], Kenji Okano [2], Kohsuke Honda [1,3]
([1] ICBiotech, Osaka Univ., [2] Fac. Chem. Mater. Bioeng., Kansai Univ., [3] OTRI, Osaka Univ.)

15:36 3Op12 Glycerol production using genetically engineered cyanobacteria employing photobioreactor with external circulation loop

…… ◯Jingyuan Ye [1], Jun-ichi Horiuchi [1], Yoichi Kumada [1], Yasutaka Hirokawa [2], Taizo Hanai [2], Akio Murakami [3], Sinya Ogura [1], Ryouta Hasi [1], Mayuko Takeda [1]
([1] Grad. Sch. Sci. Technol., Kyoto Inst. Technol., [2] Grad. Sch. Agric., Kyushu Univ., [3] Grad. Sch. Eng, Kobe Univ.)

15:48 3Op13 Breeding of *Lipomyces starkeyi* N5-15 strain, a hyperaccumulator of lipids

…… ◯Kentaro Mine [1,2], Hiroya Taki [1], Shinji Matsuo [1], Mao Fukii [2], Ryohei Yamayoshi [2], Rikako Sato [2], Hiroaki Takaku [2]
([1] Nissin Foods Holdings Co., Ltd., [2] Fac. Appl. Life Sci., Niigata Univ. Pharm. Appl. Life Sci.)

16:00 3Op14 Analysis of Oil Accumulation Mechanism in Open-Pond Outdoor Cultivation of *Fistulifera solaris*

…… ◯Haru Fukuda [1], Ryota Kumakubo [1], Satoshi Murata [1], Yasuhiko Nishimura [2], Tomoko Yoshino [1], Tsuyoshi Tanaka [1]
([1] Grad. Sch. Eng., Tokyo Univ. Agric. Technol., [2] J-POWER)

16:12 3Op15 Synthesis of 1,4-Cyclohexadiene from unsaturated fatty acids produced by *Aurantiochytrium* sp.

…… ◯Satoshi Tomizawa, Aozora Kawamoto, Kenji Oshima (Kumamoto Natl. coll. Technol.)

16:24 3Op16 Mutational breeding and analysis of an induced glyceride accumulation-deficient strain in *Chlamydomonas reinhardtii*

…… ◯Yuichi Kato [1,2], Tomohisa Hasunuma [1,2] ([1] EGBRC, Kobe Univ., [2] Grad. Sch. Sci. Technol. Innov., Kobe Univ.)

Luncheon Seminars（11:30–12:30）

Room B IB015

3L-B01 Bacchus Bio innovation Co., Ltd.

Room D IB013

3L-D01 SCIEX

Room G ES022

3L-G01 Refeyn Japan

Room I ES025

3L-I01 Toyota Central R&D Labs., lnc.