

Program

Day 1: November 2 (Wed)

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| 9:55-10:00 | Opening Remarks | |
| 10:00-10:15 | Oral Presentations Chairman: Shigeori Takenaka Kyushu Institute of Technology | 10-01 Synthesis of phosphoramidites for 3'-amino linker modification of base-labile oligonucleotides <u>Takashi Osawa</u> ¹⁾ , Qin Ren ¹⁾ , Satoshi Obika ¹⁾²⁾³⁾ 1) Graduate School of Pharmaceutical Sciences, Osaka University, 2) Institute for Open and Transdisciplinary Research Initiatives, Osaka University, 3) National Institutes of Biomedical Innovation, Health and Nutrition |
| 10:15-10:30 | | 10-02 4'-C-aminoethoxy modification augments stability of RNAs and DNAs, exhibiting sustained gene silencing <u>Akash Chandela</u> ¹⁾ , Ryo Tsukimura ²⁾ , Yuki Katsuzaki ²⁾ , Ryohei Kajino ³⁾ , Yoshihito Ueno ¹⁾²⁾³⁾ 1) Faculty of Applied Biological Sciences, Gifu University, 2) Graduate School of Natural Science and Technology, Gifu University, 3) The United Graduate School of Agricultural Science, Gifu University |
| 10:30-10:45 | | 10-03 Selective photo-catalytic proximity labeling of G4 DNA-interacting proteins for the interaction proteomes of G4 DNA <u>Ahmed Mostafa Abdelhady</u> ¹⁾ , Kazumitsu Onizuka ¹⁾ , Tatsuki Masuzawa ²⁾ , Shinichi Sato ³⁾ , Keita Nakane ³⁾ , Takanori Oyoshi ²⁾ , Fumi Nagatsugi ¹⁾ 1) IMRAM, Tohoku University, 2) Graduate School of Science and Technology, Shizuoka University, 3) FRIS, Tohoku University |
| 10:45-11:00 | | 10-04 New parameters for accurate prediction of RNA/DNA hybrid duplex stability and their advantage in CRISPR-Cas9 technique <u>Dipanwita Banerjee</u> ¹⁾ , Hisae Tateishi-Karimata ¹⁾ , Tatsuya Ohyama ¹⁾ , Saptarshi Ghosh ¹⁾ , Tamaki Endoh ¹⁾ , Shuntaro Takahashi ¹⁾ , Naoki Sugimoto ¹⁾²⁾ 1) Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, 2) Graduate School of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University |
| 11:00-11:15 | Break | |
| 11:15-12:05 | Invited Lecture 1 Chairman: Naoki Sugimoto Konan University | IL-01 Flex-nucleosides – a strategic approach to broad-spectrum antiviral therapeutics <u>Katherine L. Seley-Radtke</u> Professor, Department of Chemistry & Biochemistry, University of Maryland |
| 12:05-13:25 | Lunch Break | |
| 13:25-15:25 | Poster Presentations (1P-01~1P-67) | |
| 15:25-15:40 | Oral Presentations Chairman: Takashi Morii Kyoto University | 10-05 Crystallographic studies of ruthenium polypyridyl complexes bound to G-quadruplexes: Towards design, specificity, and function <u>Kane McQuaid</u> ¹⁾ , David Cardin ¹⁾ , James Hall ²⁾ , Neil Paterson ³⁾ , Shuntaro Takahashi ⁴⁾ , Naoki Sugimoto ⁴⁾ , Christine Cardin ¹⁾ 1) Department of Chemistry, University of Reading, UK, 2) Department of Pharmacy, University of Reading, UK, 3) Diamond Light Source Ltd., Didcot, UK, 4) FIBER, Konan University, Kobe, Japan |

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| 15:40-15:55 | | 10-06 Liquid to solid phase transition of short RNA promoted by RNA structure in neurodegenerative diseases <u>Shiyu Wang</u> , Yan Xu Department of Medical Sciences, Faculty of Medicine, University of Miyazaki |
| 15:55-16:10 | | 10-07 In quasi-cell evolution of an RNA-cleaving ribozyme using droplet screening integrated devices <u>Shigeyoshi Matsumura</u> , Tomoe Imai, Motochika Ehara, Yuka Nishiyama, Yoshiya Ikawa Graduate School of Science and Engineering, University of Toyama |
| 16:10-16:25 | | 10-08 Toehold-mediated DNA hairpin circuits augmented by cationic copolymer <u>Jun Wang</u> , Naohiko Shimada, Atsushi Maruyama Department of Life Science and Technology, Tokyo Institute of Technology |
| 16:25-16:40 | Break | |
| 16:40-17:30 | Invited Lecture 2 Chairman: Shuntaro Takahashi Konan University | IL-02 Advances and Future Perspectives of NIR Fluorescence Paradigms in Cutting-edge Theranostic Bio-applications <u>Bengang Xing</u> ¹⁾ , Thang Do Cong ²⁾ , Caixia Sun ²⁾ , Songhan Liu ²⁾ 1) Professor, Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, 2) School of Chemistry, Chemical Engineering, and Biotechnology (CCEB) Nanyang Technological University (NTU), Singapore |
| 17:30-17:45 | Oral Presentations Chairman: Daisuke Miyoshi Konan University | 10-09 Chemical communication between microdroplets using cell-free riboswitches <u>Takeshi Tabuchi</u> , Yohei Yokobayashi Nucleic Acid Chemistry and Engineering Unit, Okinawa Institute of Science and Technology Graduate University |
| 17:45-18:00 | | 10-10 Stereoselective synthesis of dinucleoside phosphorothioates using chiral phosphoric acid salts as activators <u>Natsuhisa Oka</u> ¹⁾²⁾ , Tomoki Sakai ¹⁾ , Kensuke Ori ¹⁾ , Naoki Seo ¹⁾ , Kosuke Suzuki ¹⁾ , Takuya Otsuji ¹⁾ , Yuya Shibata ¹⁾ , Kaori Ando ¹⁾ 1) Department of Chemistry and Biomolecular Science, Faculty of Engineering, Gifu University, 2) Institute for Glyco-core Research (iGCORE), Gifu University |
| 18:00-18:15 | | 10-11 Complete Chemical Synthesis of mRNA by Chemical Capping Reaction <u>Yasuaki Kimura</u> ¹⁾ , Naoko Abe ¹⁾ , Akihiro Imaeda ¹⁾ , Masahito Inagaki ¹⁾ , Fumitaka Hashiya ¹⁾ , Satoshi Uchida ²⁾ , Hiroto Iwai ³⁾ , Masakazu Honma ³⁾ , Junichiro Yamamoto ³⁾ , Hiroshi Abe ¹⁾⁴⁾ 1) Department of Chemistry, Graduate School of Science, Nagoya University, 2) Graduate School of Medicine, Kyoto Prefecture University of Medicine, 3) Kyowa Kirin Co., Ltd, 4) Institute for Glyco-core Research (iGCORE) |
| 18:15-18:30 | | 10-12 Novel Strategy of Enhancement of RNase H Mediated Target RNA Digestion Activities by DNA-Artificial Nucleic Acid Chimera with Site Selective Cleavage Toward Application of COVID-19 Therapeutics <u>Takehiko Wada</u> ¹⁾ , Nozomu Ishiwata ¹⁾ , Kazutoshi Fujita ¹⁾ , Masahito Inagaki ³⁾ , Hironori Hayashi ²⁾ , Yuto Horiuchi ¹⁾ , Ryota Azuma ¹⁾ , Masaki Nishijima ¹⁾ , Yasuyuki Araki ¹⁾ , Eiichi Kodama ²⁾ 1) IMRAM, Tohoku University, 2) IRDeS, Tohoku University, 3) Graduate School of Science, Nagoya University |

Day 2: November 3 (Thu)

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| 10:00-10:15 | Oral Presentations Chairman: Atsushi Maruyama Tokyo Institute of Technology | 20-01 A Fluorescence Probe ANP77 for Sensing RNA Internal Loops and Their Binding Molecules <u>Bimolendu Das</u> ¹⁾ , Asako Murata ¹⁾²⁾ , Kazuhiko Nakatani ¹⁾ 1) Department of Regulatory Bioorganic Chemistry, SANKEN, Osaka University, 2) Department of Material Sciences, Faculty of Engineering Sciences, Kyushu University, Japan |
| 10:15-10:30 | | 20-02 Base-pair opening dynamics and interactions with ligands of nucleic acids in living human cells studied by in-cell NMR <u>Yudai Yamaoki</u> ¹⁾²⁾ , Omar Eladl ²⁾ , Keiko Kondo ¹⁾ , Tomoki Sakamoto ²⁾ , Takashi Nagata ¹⁾²⁾ , Masato Katahira ¹⁾²⁾ 1) Institute of Advanced Energy, Kyoto University, 2) Graduate School of Energy Science, Kyoto University |
| 10:30-10:45 | | 20-03 A strategy to control the affinity to the target cells using functional oligonucleotides <u>Tatsuya Nishihara</u> , Risa Yamada, Daichi Oka, Kazuhito Tanabe College of Science and Engineering, Aoyama Gakuin University |
| 10:45-11:00 | | 20-04 Interaction of peptide-linked cyclic naphthalene dimides with G-quartet cluster <u>Shigeori Takenaka</u> , Kentarou Ono, Shinobu Sato Department of Applied Chemistry, Kyushu Institute of Technology |
| 11:00-11:15 | Break | |
| 11:15-12:05 | Invited Lecture 3 Chairman: Masato Katahira Kyoto University | IL-03 Diversity of G-quadruplexes and their interaction with proteins <u>Anh Tuân Phan</u> Professor, Division of Physics & Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University |
| 12:05-13:25 | Lunch Break | |
| 13:25-15:25 | Poster Presentations (2P-01~2P-67) | |
| 15:25-15:40 | Break | |
| 15:40-16:10 | Special Lecture 1 Chairman: Kazuhiko Nakatani Osaka University | SL-01 Studies on the regulation of DNA structure and function <u>Hiroshi Sugiyama</u> Professor, iCeMS, Kyoto University |
| 16:10-16:40 | Special Lecture 2 Chairman: Mitsuo Sekine Emeritus Professor, Tokyo Institute of Technology | SL-02 Creation of genetic alphabet expansion technologies <u>Ichiro Hirao</u> Chief Scientific Officer, Xenolis Pte. Ltd |
| 16:40-16:50 | Break | |
| 16:50-18:00 | JSNAC General Meeting | |

Day 3: November 4 (Fri)

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| 10:00-10:50 | Invited Lecture 4 Chairman: Makoto Komiyama Emeritus Professor, University of Tokyo | IL-04 Circularization of ssDNA or ssRNA and its applications Ran An ¹⁾²⁾ , Hui Chen ¹⁾ , Mengqing Liu ¹⁾ , Zhe Sui ¹⁾ , Zhenzhu Gu ¹⁾ , Yixiao Cui ¹⁾ , Yaping Zhang ¹⁾ , Lin Li ¹⁾ , Qi Li ¹⁾ , Makoto Komiyama ¹⁾ , <u>Xingguo Liang</u> ¹⁾²⁾ 1) College of Food Science and Engineering, Ocean University of China, Qingdao 266003, China, 2) Laboratory for Marine Drugs and Bioproducts, Qingdao National Laboratory for Marine Science and Technology, Qingdao 266235, China |
| 10:50-11:05 | Break | |
| 11:05-11:20 | Oral Presentations Chairman: Toshihiro Ihara Kumamoto University | 3O-01 Characterization of High-Affinity Unnatural-Base DNA Aptamers Generated by Genetic Alphabet Expansion Technology <u>Michiko Kimoto</u> ¹⁾ , Ken-ichiro Matsunaga ¹⁾ , Hui Pen Tan ¹⁾ , Nur Afiqah Binte Mohd Mislán ¹⁾²⁾ , Ichiro Hirao ¹⁾²⁾ 1) Institute of Bioengineering and Bioimaging, A*STAR, 2) Xenolis Pte. Ltd. |
| 11:20-11:35 | | 3O-02 Anti-idiotypic aptamer against Bevacizumab and its affinity change depending on pH <u>Kazunori Ikebukuro</u> ¹⁾ , Taro Saito ¹⁾ , Yutaka Shimizu ¹⁾ , Kaori Tsukakoshi ¹⁾ , Ryutaro Asano ¹⁾ , Tomohiro Yamada ²⁾ , Tatsuki Nakano ²⁾ , Kodai Hara ³⁾ , Hitoshi Hashimoto ³⁾ , Kenichiro Todoroki ²⁾ 1) Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology, 2) Department of Analytical and Bio-Analytical Chemistry, School of Pharmaceutical Sciences, University of Shizuoka, 3) Department of Physical Biochemistry, School of Pharmaceutical Sciences, University of Shizuoka |
| 11:35-11:50 | | 3O-03 Efficient Ligation of Nicks in DNA Origami <u>Arivazhagan Rajendran</u> , Kirankumar Krishnamurthy, Eiji Nakata, Takashi Morii Institute of Advanced Energy, Kyoto University |
| 11:50-12:05 | | 3O-04 A novel strategy for the selective inhibition of membrane protein functions with DNA aptamers <u>Ryosuke Ueki</u> ¹⁾ , Junya Hoshiyama ¹⁾ , Shinsuke Sando ¹⁾²⁾ 1) Department of Chemistry and Biotechnology, Graduate School of Engineering, The University of Tokyo, 2) Department of Bioengineering, Graduate School of Engineering, The University of Tokyo |
| 12:05- | Closing Remarks | |