

List of Poster Presentation on Day 1 (November 12, Wed)

Poster Presentations Odd Numbers: Nov. 12 (Wed) 14:00-14:45

Even Numbers: Nov. 12 (Wed) 14:45-15:30

- 1P-01 Stereoselective synthesis of truncated carbocyclic nucleosides using Wittig reagents derived from sugars**
Natsuhisa Oka,^{1,2,3,*} **Yusaku Ito**,¹ **Shoma Horiki**¹
¹Department of Chemistry and Biomolecular Science, Faculty of Engineering, Gifu University,
²Institute for Glyco-core Research (iGCORE), Gifu University, ³Center for One Medicine Innovative Translational Research (COMIT), Institute for Advanced Study, Gifu University
- 1P-02 Preparation of 5'-modified thymidine derivatives for the synthesis of nucleic acids bearing an exomethylene group at the 5'-position**
Risa Yamaguchi,¹ **Yoshiaki Kitamura**^{1,2,3,4,*}
¹Graduate School of Natural Science and Technology, Gifu University, ²Faculty of Engineering, Gifu University, ³United Graduate School of Drug Discovery and Medical Information Sciences, Gifu University, ⁴Center for One Medicine Innovative Translational Research (COMIT), Institute for Advanced Study, Gifu University
- 1P-03 Facile approach to 4'-modified nucleosides via 1,5-hydrogen atom transfer/intermolecular 1,4-addition process**
Yuta Ito, **Juri Kang**, **Yasufumi Fuchi**, **Yoshiyuki Hari**^{*}
 Faculty of Pharmaceutical Sciences, Tokushima Bunri University
- 1P-04 Synthesis and Evaluation of Cdap Derivatives Designed for Recognition of 8-oxo-dG in DNA**
Yuta Chikada and **Yosuke Taniguchi**^{*}
 Graduate School of Medicine, Dentistry and Pharmaceutical Science, Okayama University
- 1P-05 Development of C2-substituted fluorescent acyclic adenosine derivatives incorporated into DNA**
Shun Ogura,¹ **Reo Tada**,² **Yurino Oku**,¹ **Yoshio Saito**^{1,2,*}
¹Graduate School of Engineering, Nihon University, ²College of Engineering, Nihon University
- 1P-06 Polymerase-mediated incorporation of unnatural alkynylated purine-pyridone base pair**
Wenjue Fan,^{1,2} **Hidenori Okamura**,^{1,2,3,*} **Zhuoxin Dong**,^{1,2} **Giang Hoang Trinh**,^{1,2} **Yosuke Taniguchi**,³ **Fumi Nagatsugi**^{1,2,*}
¹Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, ²Graduate School of Science, Tohoku University, ³Faculty of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University
- 1P-07 Synthesis of guanosine tetraphosphate (ppGpp) and its derivatives using photo-removable protecting group**
Yukine Suda, **Konatsu Ishikawa**, **Yudai Suzuki**, **Eitaro Murakami**, **Yoshiaki Masaki**, **Kohji Seio**^{*}
 Department of Life Science and Technology, Institute of Science Tokyo
- 1P-08 Synthesis and properties of α -TFO using 2-thiothymine to improve triplex-formation ability**
Takeru Endo, **Jijun Liang**, **Akihiro Ohkubo**, **Kohji Seio**^{*}
 Department of Life Science and Technology, Institute of Science Tokyo
- 1P-09 The inhibition of interaction between V β BCC complex and A3G by RNA aptamer**
Tomohiro Shinozaki,¹ **Kentaro Tozawa**,² **Kazuyuki Kumagai**,¹ **Keisuke Kamba**,² **Li Wan**,^{2,3} **Masato Katahira**,^{2,3} **Takashi Nagata**,^{2,3} **Taiichi Sakamoto**^{1,*}
¹Dept. of Life and Env. Sci., Chiba Inst. Tech., ²Inst. of Adv. Energy., Kyoto Univ., ³Grad. Sch.

of Energy Sci., Kyoto Univ.

1P-10 Exploration of Nucleic Acid Design Methods Oriented to Induce Selective Cytotoxicity Using miRNAs as Biomarkers

Hiroki Oiwa, Akimitsu Okamoto*

Department of Chemistry and Biotechnology, Graduate School of Engineering, The University of Tokyo

1P-11 Development of DNA/RNA Heteroduplex-Based Anticancer Drugs

Moeko Yamada, Kunihiro Morihara,* Ryosei Komiyama, Akimitsu Okamoto*

Department of Chemistry and Biotechnology, Graduate School of Engineering, The University of Tokyo

1P-12 CuAAC-Based Synthesis of Cyclic Antisense Oligonucleotides Enabling Topological Switch-off and β -Galactosidase-Triggered Switch-on for Controlled RNA Cleavage

Kento Miyaji,* Kohji Seio

Department of Life Science and Technology, Institute of Science Tokyo

1P-13 Gene regulation in hypoxic cells by oligodeoxynucleotides bearing dialkylnitrobenzyl units

Ryo Sato, Daigo Maehara, Tatsuya Nishihara, Kazuhito Tanabe*

Graduate School of Science and Engineering, Aoyama Gakuin University

1P-14 Design and function of hypoxia-responsible DNA oligomers bearing nitrobenzyl group

Airi Kanayama, Daigo Maehara, Tatsuya Nishihara, Kazuhito Tanabe*

Graduate School of Science and Engineering, Aoyama Gakuin University

1P-15 Synthesis and In Vivo Evaluation of mRNA with Chemically Modified Poly(A) Tails

Yuma Kunitomo,¹ Atsushi Hashimoto,¹ Ittoku Kikuchi,¹ Hiroki Yamada,¹ Keiko Kobayashi,¹ Kazuhiro Soshiroda,¹ Hiromi Aman,¹ Junichiro Yamamoto,² Yasuaki Kimura,³ Yasuhisa Shiraishi,¹ Satoshi Uchida,^{4,5} Hiroshi Abe^{3,6,7,8} and Hiroto Iwai¹

¹Innovation center, Research Division, Kyowa Kirin Co., Ltd., ²Research Planning Department, Research Division, Kyowa Kirin Co., Ltd., ³Department of Chemistry, Graduate School of Science, Nagoya University, ⁴Department of Advanced Nanomedical Engineering, Medical Research Laboratory, Institute of Integrated Research, Institute of Science Tokyo, ⁵Innovation Center of NanoMedicine (iCONM), Kawasaki Institute of Industrial Promotion, ⁶Research Center for Materials Science, Nagoya University, ⁷CREST, Japan Science and Technology Agency, ⁸Institute for Glyco-core Research (iGCORE), Nagoya University

1P-16 Entirely non-natural nucleic-acid-based Staple oligomers maintain full therapeutic efficacy

Ayu Matsumoto,¹ Tomoki Kida,¹ Shin-ichi Sato,^{1,2} Toshihiro Ihara,¹ Yousuke Katsuda^{1,2*}

¹Faculty of Advanced Science and Technology, Kumamoto University, ²StapleBio Inc.

1P-17 Assembly-dependent functions of multicomponent RNA nanostructures bearing light-up RNA aptamer units

Rina Fujimori,¹ Naoya Marumo,¹ Shigeyoshi Matsumura,^{1,2} Yoshiya Ikawa^{1,2*}

¹Graduate School of Pharma-Medical Science, University of Toyama, ²Graduate School of Science and Engineering, University of Toyama

1P-18 Chemical Optimization of Small Molecules for Controlling Mammalian Synthetic Riboswitch

Bochen Zhu, Yoko Nomura, Yohei Yokobayashi*

Nucleic Acid Chemistry and Engineering Unit, Okinawa Institute of Science and Technology

1P-19 Thioribose-type trinucleotide cap analogs for in vitro synthesis of mRNA with high translational efficiency

- Daisuke Nakagawa^{1,*} Hirofumi Fukunaga,¹ Junko Shintani,¹ Masaru Takasaki¹**
FUJIFILM Corporation
- 1P-20 Phosphorothioate-Modified Nucleic Acid Assemblies for Regulation of cGAS Activity**
Tamako Aiba, Akimitsu Okamoto*
Department of Chemistry and Biotechnology, Graduate School of Engineering, The University of Tokyo
- 1P-21 Transfer of Genetic Information from Acyclic Artificial Nucleic Acid L-aTNA to DNA**
Tomonari Kazuno^{1,4} Hikari Okita,² Keiji Murayama,³ Kosuke Fujishima,¹ Hiroyuki Asanuma,³ Naoto Nemoto^{4,*}
¹Earth-Life Science Institute, Institute of Science Tokyo, ²Laboratory for Biomaterials and Bioengineering, Institute of Integrated Research, Institute of Science Tokyo, ³Graduate School of Engineering, Nagoya University, ⁴Graduate School of Science and Engineering, Saitama University
- 1P-22 Novel ultra-fast photo-triggered DNA manipulation for stable double-stranded nucleic acids such as genomic DNA**
Zumila Hailili¹ Watanabe Yasuha,¹ Nakamura Shigetaka,¹ Fujimoto Kenzo^{1,*}
Biofunctional Medical Engineering Research Area, Japan Advanced Institute of Science and Technology
- 1P-23 Stability prediction of RNA structures using nearest neighbor parameters developed in pseudo-cellular systems**
Hisae Tateishi-Karimata^{1,2*} Banerjee Dipanwita,¹ Chen Kun,¹ Shuntaro Takahashi,¹ Tomohiro Nishimura,³ Tsukasa Fukunaga,³ Michiaki Hamada,^{3,4} Naoki Sugimoto^{1*}
¹Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, ²Graduate School of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University, ³Department of Electrical Engineering and Bioscience, Graduate School of Advanced Science and Engineering, Waseda University, ⁴Cellular and Molecular Biotechnology Research Institute (CMB), National Institute of Advanced Industrial Science and Technology
- 1P-24 Development of analytical methods for G-quadruplex RNA using vinyl-quinazolinone alkylating agents**
Hina Hatayama^{1,2} Kazumitsu Onizuka,^{1,2,*} Ping-Yun Lan,^{1,2} Yutong Chen,^{1,2} Emi Miyashita,^{3,4} Kaoru R. Komatsu,³ Hirohide Saito,⁴ Fumi Nagatsugi^{1,2,*}
¹Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, ²Department of Chemistry, Graduate School of Science, Tohoku University, ³FOREST Therapeutics, ⁴CiRA, Kyoto University
- 1P-25 Effects of platinum-based antineoplastics on property and position alteration of reconstituted nucleosomes**
Xuanyu Liao¹ Takafumi Furuhashi,¹ Takuro Shioi,² Yoshimasa Takizawa,² Hitoshi Kurumizaka,² Akimitsu Okamoto^{1*}
¹Graduate School of Engineering, The University of Tokyo, ²Institute for Quantitative Biosciences, The University of Tokyo
- 1P-26 Degradation of Intercellular G-Quadruplex Binding Proteins by G4-PROTAC Ligands**
Rena Nohara¹ Yuma Tanaya,¹ Kazuo Nagasawa,¹ Masayuki Tera^{1,*}
Graduate School of Engineering, Tokyo University of Agriculture and Technology
- 1P-27 Ligand switching of i-motif DNA structure containing multiple C-tracts**
Shuntaro Takahashi^{1,2,*} Lutan Liu,¹ Joseph Openy,³ Armin Durmisevic,³ Guido H. Clever,³ and Naoki Sugimoto^{1,*}
¹Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University,

- ²Graduate School of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University, ³TU Dortmund
- 1P-28 Impact of the HIV-1 Vif-CBF β -Cul5 E3 Ligase Complex on the Cytidine Deaminase Activity of APOBEC Family Members**
Kentaro Tozawa,^{1,2} Keisuke Kamba,¹ Yudai Yamaoki,^{1,2} Takashi Nagata,^{1,2} Masato Katahira^{1,2*}
¹Inst. Adv. Energy, Kyoto Univ., ²Grad. Sch. Energy Sci., Kyoto Univ.
- 1P-29 Synthesis and Property of Novel Nucleopeptides Bearing Oxime Linkages**
Eri Matsumoto, Tomohisa Moriguchi*
 Graduate School of Science and Technology, Gunma University
- 1P-30 Distinct Replicative and Mutagenic Consequences of Different Glycidamide DNA Adducts in Human Cells**
Jun-ichi Akagi,^{1*} Masayuki Yokoi,² Yumi Miyake,³ Kohei Matsushita,¹ Kaoru Sugasawa,² Shigenori Iwai,^{2,4,5} Takeshi Toyoda¹
¹Division of Pathology, National Institute of Health Sciences, ²Biosignal Research Center, Kobe University, ³Forefront Research Center, Graduate School of Science, The University of Osaka, ⁴Graduate School of Engineering Sciences, The University of Osaka, ⁵Frontiers of Innovative Research in Science and Technology, Konan University
- 1P-31 Development of crosslinking reactions using oligonucleotides containing vinylquinazolinone**
Nadya Soemawisastra,^{1,2} Hidenori Okamura,^{1,3} Kazumitsu Onizuka,^{1,2} Yuuhei Yamano,^{1,2} Fumi Nagatsugi^{1,2,*}
¹Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, ²Department of Chemistry, Graduate School of Science, Tohoku University, ³Faculty of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University
- 1P-32 Large-scale analysis of RNA binding by small molecule G-clamp and crystallographic analysis of the complex**
Kazumitsu Onizuka,^{1,2,*} Ryosuke Nagasawa,^{1,2} Kaoru R. Komatsu,³ Emi Miyashita,³ Kosuke Tsuzuki,^{1,2} Hirotaka Murase,¹ Karen Kawamura,⁴ Jiro Kondo,⁴ Hirohide Saito,^{3,5} Fumi Nagatsugi^{1,2,*}
¹IMRAM, Tohoku University, ²Department of Chemistry, Tohoku University, ³CiRA, Kyoto University, ⁴Department of Materials and Life Sciences, Sophia University, ⁵Institute for Quantitative Biosciences, the University of Tokyo
- 1P-33 Sequencing of peptide nucleic acid by duplex formation**
Kazuma Inagaki,¹ Yuichiro Aiba,² Osami Shoji,² Hiroyuki Asanuma,¹ Hiromu Kashida^{1*}
¹Department of Biomolecular Engineering, Graduate School of Engineering, Nagoya University, ²Department of Chemistry, Graduate School of Science, Nagoya University
- 1P-34 Development of RNA-binding small molecules with pH-dependent and light-up properties**
Dylan Christian Thomas,^{1,2} Kazumitsu Onizuka,^{1,2*} Kosuke Tsuzuki,^{1,2} Ryosuke Nagasawa,^{1,2} Fumi Nagatsugi^{1,2*}
¹Institute of Multidisciplinary Research for Advanced Materials, ²Graduate School of Science, Tohoku University
- 1P-35 Molecular crowding effect on liquid-liquid phase separation induced by G-quadruplex DNA**
Misaki Yoshikawa, Keiko Kawauchi, Daisuke Miyoshi*
 Frontiers of Innovative Research in Science and Technology (FIRST), Konan University
- 1P-36 Development of fluorine-containing visible light responsive artificial nucleic acids for intracellular nucleic acid imaging**
Tatsushi Noda, Junichi Mihara, Shigetaka Nakamura, Kenzo Fujimoto
 Bioscience, Biotechnology, and Biomedical Engineering, Japan Advanced Institute of Science and Technology
- 1P-37 Chemical and Photo-induced Crosslinking of Oligo DNA Duplex**

Functionalized with 2'-deoxythioguanosines

Jamila A. Osman^{1,2} **Kazumitsu Onizuka**^{1,2,*} **Yuuhei Yamano**^{1,2} **Fumi Nagatsugi**^{1,2,*}

¹Institute of Multidisciplinary Research for Advanced Materials, Tohoku University,

²Department of Chemistry, Graduate School of Science, Tohoku University

1P-38 Selection of RNA aptamers specific to macrolide antibiotics from a genomic RNA library

Daito Koga¹ **Makoto Kawatani**² **Kaori Honda**² **Shinya Hagihara**² **Asako Murata**^{3,*}

¹Department of Interdisciplinary Engineering Science, Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, ²Chemical Resource Development Research Unit, RIKEN Center for Sustainable Resource Science, RIKEN, ³Department of Advanced Materials Science and Engineering, Faculty of Engineering Sciences, Kyushu University

1P-39 Molecular design of nucleic acid detection sensors based on stability of inactive structures

Emily Matsusaka¹ **Yuuka Watahiki**¹ **Tell Be-Wata**¹ **Nae Sakimoto**² **Junji Kawakami**^{1,2,*}

¹Department of Nanobiochemistry, FIRST, Konan University, ²Konan Laboratory for Oligonucleotide Therapeutics (KOLOT)

1P-40 Quantitative analysis of NMR signals for the NMR screening of small molecules binding to RNA structure elements

Yoko Shinohara¹ **Megumi Tomemori**¹ **Rika Ichijo**¹ **Kaori Hatta**¹ **Kazuhiko Nakatani**² **and Gota Kawai**^{1,*}

¹Chiba Institute of Technology, ²Osaka University

1P-41 DNA G-quadruplex dynamics during liver regeneration after partial hepatectomy in mice

Takumi Ishizuka^{1,*} **Kham Mo Aung**¹ **Toshiki Kubota**^{1,2} **Baljinnyam Lkham-Erdene**¹ **Kengo Kai**¹ **Phyu Synn Oo**¹ **Yoshitaka Hishikawa**^{1,*}

¹Department of Anatomy, Histochemistry and Cell Biology, Faculty of Medicine, University of Miyazaki, ²Department of Oral and Maxillofacial Surgery, Faculty of Medicine, University of Miyazaki

1P-42 Solution structure of Z-form DNA bound to acuraxin ligand CBL0137

Feifan Liu, **Shiyu Wang**, **Yan Xu***

Division of Chemistry, Department of Medical Sciences, Faculty of Medicine, University of Miyazaki

1P-43 NMR analysis of a non-G4-type RNA aptamer that lights up a GFP-like fluorogenic ligand

Haruka Yamamoto¹ **Shino Aburaya**² **Yoshiya Ikawa**^{2,3} **Taiichi Sakamoto**^{1,*}

¹Graduate School of Advanced Engineering, Chiba Institute of Technology, ²Graduate School of Pharma-Medical Sciences, University of Toyama, ³Graduate School of Science and Engineering, University of Toyama

1P-44 Assessing Ligand-Dependent G-Quadruplex-Protein Ternary Assembly

Yuma Tanaya¹ **Hisao Masai**² **Hiroyuki Sasanuma**² **Daimei Miura**¹ **Ryutaro Asano**¹ **Kazuo Nagasawa**¹ **and Masayuki Tera**^{1,*}

¹Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology, ²Department of Basic Medical Sciences, Tokyo Metropolitan Institute of Medical Science

1P-45 Structural Analysis of the 5' Terminal of HIV-1 Genome RNA with Mismatches

Yuka Kashiya, **Gota Kawai***

Chiba Institute of Technology

1P-46 Effect of the number of G residues at the 5'-terminal of HIV-1 genome RNA on the reverse transcription reaction

Haruna Kinoshita, **Gota Kawai**

- Graduate School of Advanced Engineering, Chiba Institute of Technology
- 1P-47 Development of trioxazole fluorescent probes for tracking of the dynamic behavior of G-quadruplexes**
Haruki Fujita,¹ Naruyuki Watatani,¹ Shogo Sasaki,² Sachiko Okabe,³ Hiroyuki Seimiya,³ Takatsugu Hirokawa,⁴ Masayuki Tera,¹ Yue Ma,⁵ Kazuo Nagasawa^{1,*}
¹Graduate School of Engineering, Tokyo University of Agriculture and Technology, ²Nara Women's University, ³Cancer Chemotherapy Center, Japanese Foundation for Cancer Research, ⁴Division of Biomedical Science, University of Tsukuba, ⁵Institute of Science Tokyo
- 1P-48 Development of single nucleotide polymorphism detection method based on the specific binding of mismatched base pair to metal ion and the G-triplex formation**
Sora Sugao, Hidetaka Torigoe^{*}
 Graduate School of Science, Tokyo University of Science
- 1P-49 Parallel-Stranded Design of Peptide Nucleic Acids Facilitates Invasion Complex Formation with Double-Stranded DNA**
Yuichiro Aiba,^{1,*} Masanari Shibata,² Hiroshi Sugimoto,³ Masaki Hibino,¹ Osami Shoji^{1,*}
¹Graduate School of Science, Nagoya University, ²Research Center for Materials Science, Nagoya University, ³RIKEN SPring-8 Center
- 1P-50 Design of substrate recognition sequences in the 10-23 DNAzyme**
Natsuki Doi,¹ Tell Be-Wata,¹ Marina Fukui,¹ Nae Sakimoto,² Junji Kawakami^{1,2,*}
¹Department of Nanobiochemistry, FIRST, Konan University, ²Konan Laboratory for Oligonucleotide Therapeutics (KOLOT), Konan University
- 1P-51 *In vitro* biochemical analysis of the DNA-hydrolyzing group II ribozyme HYER**
Shogo Tanishi,¹ Ami Homma,² Yoshiya Ikawa,^{1,3} Shigeyoshi Matsumura^{1,3,*}
¹Graduate School of Pharma-Medical Science, University of Toyama, ²Graduate School of Science, University of Toyama, ³Graduate School of Science and Engineering, University of Toyama
- 1P-52 Highly Sensitive Detection of Mutant Cancer Genes by Convenient and Low-Cost Real Time PCR**
Masayuki Fujii,^{1*} Daichi Yano,² Ryuji Kitano^{2*}
¹Graduate School of Integrated Science and Technology, Nagasaki University, ²Graduate School of Humanity Oriented Science and Engineering, Kindai University
- 1P-53 Sequence dependence in the formation of hexagonal liquid crystals composed of short DNA**
Tetsunao Makino,¹ Keisuke Miyazawa,² Kenta Sawada,² Takeshi Fukuma,² Makiko Tanaka^{1,*}
¹Graduate School of Informatics and Engineering, The University of Electro-Communications, ²WPI Nano Life Science Institute, Kanazawa University
- 1P-54 Assessing the Impact of Linker Arm Structures in Modified Bases on Enzymatic Incorporation Accuracy**
Tadahiro Hosoda,¹ Yuuya Kasahara,^{2,3} Hidekazu Hoshino,^{2,3} Kenta Ishida,^{2,3} Masayasu Kuwahara^{1*}
¹Graduate School of Integrated Basic Sciences, Nihon University, ²National Institutes of Biomedical Innovation, Health and Nutrition, ³Graduate School of Pharmaceutical Sciences, The University of Osaka
- 1P-55 Self-assembled DNA Microfibers from a Single Oligonucleotide via Depletion Interactions**
Sou Shirai,¹ Tetsunao Makino,¹ Takashi Kajitani,² Makiko Tanaka^{1*}
¹Department of Engineering Science, Graduate School of Informatics and Engineering, The University of Electro-Communications, ²Core Facility Center, Research Infrastructure

- Management Center, Institute of Science Tokyo
- 1P-56 Photoregulation of SNA/RNA duplex formation by SNA containing pyrenylvinylguanine**
Ayaka Ikeda, Fuminori Sato, Hiroyuki Asanuma,* Keiji Murayama*
 Graduate school of engineering, Nagoya University
- 1P-57 Fluorinated G-quadruplex RNA for Highly Sensitive Photodynamic Diagnosis**
Rie Iwakiri,¹ Shiyu Wang,¹ Takashi Okazoe,² Mihoko Noro,² Yan Xu^{1,*}
¹Division of Chemistry, Department of Medical Sciences, Faculty of Medicine, University of Miyazaki, ²AGC Inc.
- 1P-58 X-ray analysis of modified nucleic acids containing metal-mediated base pairs**
Kai Kosugi,¹ Ayano Sugawara,¹ Erika Iwase,¹ Shoji Fujiwara,² Hiroki Kanazawa,¹ Akira Ono,² Jiro Kondo¹
¹Sophia University, ²Kanagawa University
- 1P-59 Structure-Switching Aptamers for Triggered Cargo Release**
Rosa Márquez-Costa, Yohei Yokobayashi*
 Nucleic Acid Chemistry and Engineering Unit, Okinawa Institute of Science and Technology
- 1P-60 Self-assembled Structures and Interfacial Activity of Fluorinated DNAs for Physicochemical Insights into Their Intracellular Delivery**
Ryosuke Ito,¹ Minako Narita,¹ Ai Kohata,¹ Masafumi Sugiyama,¹ Kunihiro Morihiro,¹ Akimitsu Okamoto,¹ Satoru Homma,² Takashi Okazoe,² Daisuke Kawaguchi^{1,*}
¹Department of Chemistry and Biotechnology, Graduate School of Engineering, the University of Tokyo, ²Materials Integration Laboratories, AGC Inc.
- 1P-61 Selective accumulation of oligodeoxynucleotides on hypoxic cell membrane and their applications**
Yusuke Sakurano, Reina Kainuma, Daigo Maehara, Tatsuya Nishihara, Kazuhito Tanabe*
 Graduate School of Science and Engineering, Aoyama Gakuin University
- 1P-62 Development of High-affinity Aptamers through Base Appended Base (BAB) Modification**
Hirofumi Minagawa, Yu Akiyama, Takahiro Shiga, Ikuo Shiratori*
 NEC Solution Innovators, Ltd.
- 1P-63 An expanded codon system for the screening of PNA-encoded libraries of increased chemical diversity**
Jungyeon Kim, Jun Hyung Park, Hyun-Suk Lim*
 Department of Chemistry, Pohang University of Science and Technology
- 1P-64 High-Throughput Screening of RNA Switches for Next-Generation Gene Therapies**
Tomoya Noma, Yohei Yokobayashi*
 Nucleic Acid Chemistry and Engineering Unit, Okinawa Institute of Science and Technology
- 1P-65 Design of RNA-binding monomethine cyanine dyes and their application to analysis of RNA dynamics in nucleolar stress response**
Masaaki Nagaoka, Yusuke Sato, Kei Higuchi, Seichi Nishizawa*
 Graduate School of Science, Tohoku University
- 1P-66 Systematic evaluation of RNA binding motifs using a doped library and linker-modified small molecules**
Yusuke Takashima,^{1,2} Eitaro Murakami,^{1,3} Rika Ichijo,⁴ Gota Kawai,⁴ Kazuhiko Nakatani^{1,*}
¹SANKEN, The University of Osaka, ²National Institutes of Biomedical Innovation, Health and Nutrition, ³Sch. Life Sci. Tech., Science Tokyo, ⁴Graduate School of Advanced Engineering, Chiba Institute of Technology

List of Poster Presentation on Day 2 (November 13, Thu)

Poster Presentations Odd Numbers: Nov. 13 (Thu) 14:00-14:45

Even Numbers: Nov. 13 (Thu) 14:45-15:30

- 2P-01 Investigation of the base-pairing behavior of deazaadenine derivatives**
Hayata Ono,¹ Yuta Kanezawa,² Satoshi Okamoto,² Yoshio Saito^{1,2,*}
¹Graduate School of Engineering, Nihon University, ²College of Engineering, Nihon University
- 2P-02 Synthesis and Application of Fluorescent Thymidine Triphosphate Analogues for Polymerase Reactions**
Tomotaka Kumagai,¹ Kenta Ishida,^{2,3} Yuuya Kasahara,^{2,3} Satoshi Obika,³ Hiroshi Sugiyama,⁴ Soyoung Park^{5,*}
¹Department of Chemistry, Graduate School of Science, Kyoto University, ²National Institutes of Biomedical Innovation, Health and Nutrition, ³Graduate School of Pharmaceutical Sciences, The University of Osaka, ⁴Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University, ⁵Immunology Frontier Research Center (iFReC), The University of Osaka
- 2P-03 3-Cyano-3-Deazaguanosine: Synthesis and Structural Basis for RNA Stabilization**
Hisao Saneyoshi, Shiyu Wang, Yan Xu^{*}
 Division of Chemistry, Department of Medical Sciences, Faculty of Medicine, University of Miyazaki
- 2P-04 Optimizing purification methods and downstream process simulation for AmNA-modified oligonucleotide utilizing twin-column continuous chromatography MCSGP-AutoPeak**
Chie Yamashita,^{1*} Mayuko Mouri,² Kengo Kashio,² Rei Takeuchi,² Eigo Muto,² Kiyotaka Takimoto,¹ Junji Kawakami,³ Takao Inoue,⁴ Satoshi Obika,⁵ Munehiro Shoda¹
¹Purification Technology Department, YMC CO., LTD., ²Continuous Process Department, YMC CO., LTD., ³Konan University, ⁴National Institute of Health Sciences, ⁵Osaka University
- 2P-05 Assignment of stereochemistry at phosphorus atoms of phosphorodiamidate morpholino nucleotide dimers by NMR analysis**
Ryuichi Inutake,¹ Taiichi Sakamoto,² Kazuki Sato,¹ Takeshi Wada^{1,*}
¹Department of Medicinal and Life Sciences, Graduate School of Pharmaceutical Sciences, Tokyo University of Science, ²Department of Life Science, Faculty of Advanced Engineering, Chiba Institute of Technology
- 2P-06 Tag-Assisted Liquid-Phase Oligonucleotide Synthesis: Toward a Convergent Route**
Shinnosuke Akahane,¹ Yuki Takahashi,¹ Eimi Morikawa,¹ Masae Sugai,¹ Hideaki Umemoto,² Takuya Onaka,² Satoshi Ito,² Naoto Taki,² Yuya Yoshida,² Yuto Toichi,² Yoshikazu Kitano,¹ Kazuhiro Chiba,¹ Yohei Okada^{1*}
¹Tokyo University of Agriculture and Technology, ²FUJIMOTO CHEMICALS Co., Ltd.
- 2P-07 Development of alkynyl C-nucleotide duplexes with artificial base pairs mimicking the base-pair sizes of native A/T and G/C**
Nobutaka Hayashi,¹ Komichi Yamamoto,¹ Junya Chiba,^{1,*} Yuki Ohishi,¹ Masahiko Inouye¹
 Graduate School of Medicine and Pharmaceutical Sciences, University of Toyama
- 2P-08 Phenylpyrrolocytosine: More Than Just a Fluorophore?**
Robert H.E. Hudson,^{1,*} Zi Wang,¹ David Monchaud²
¹Department of Chemistry, The University of Western Ontario, ²Institut de Chimie Moléculaire de l'Université de Bourgogne (ICMUB)
- 2P-09 Analysis of Modified Long RNA by Data-Independent LC-MS/MS of**

Multiple Ribonuclease Digests with AQXeNA

Yuki Matsubara,¹ Akari Ito,¹ Catalin E Doneanu,² Yasuto Yokoi^{1*}

¹Mitsui Knowledge Industry, ²Waters Corporation

2P-10 A Strategy for Gene Upregulation Based on RNA Hacking

Miko Kato,¹ Yua Hasegawa,¹ Shin-ichi Sato,^{1,2} Toshihiro Ihara,¹ Yousuke Katsuda^{1,2*}

¹Faculty of Advanced Science and Technology, Kumamoto University, ²StapleBio Inc.

2P-11 Tripodal quinone-canine G-quadruplex ligands as novel photosensitizers on photoinduced cancer cell death

Takashi Sakamoto,^{1,2,*} Jyunya Muramoto¹

¹Graduate School of Systems Engineering, ²Faculty of Systems Engineering, Wakayama University

2P-12 In Vivo Translation Control via RNA Higher-Order Structure Induction by Staple Oligomers

Mahiro Ohtani,¹ Tomoki Kida,¹ Shin-ichi Sato,^{1,2} Toshihiro Ihara,¹ Yousuke Katsuda,^{1,2*}

¹Faculty of Advanced Science and Technology, Kumamoto University, ²StapleBio Inc.

2P-13 Synthesis and Properties of Prodrug-Type Cyclic Antisense Oligonucleotides Crosslinked via Branched Self-Immolative Linkers at Nucleobases

Narumi Habu, Kento Miyaji, Kohji Seio^{*}

Department of Life Science and Technology, Institute of Science Tokyo

2P-14 Point mutation-induced covalent bond formations by ODNs with aryl diazirine-conjugated ODNs

Koki Takeda,¹ Daiki Unita,¹ Kazuya Matsuo,² Tomonori Waku,² Akio Kobori^{2,*}

¹Graduate School of Science and Technology, Kyoto Institute of Technology, ²Faculty of Molecular Chemistry and Engineering, Kyoto Institute of Technology

2P-15 Covalent inhibition of telomerase by photoresponsive α -chloroaldehyde-conjugated oligonucleotides

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2P-16 Acyclic Nucleic Acid Substitution Reduces Gapmer-ASO Toxicity by Suppressing p54nrb Mislocalization

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2P-17 Cell-Specific Nearest-Neighbor Parameters for Developing Functional DNA Devices Working in Cancer Cells

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2P-18 Factors affecting liquid-liquid phase separation triggered by i-motif DNA
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2P-19 Fluorescence properties of 2'-O-methyl RNA containing a pyrene-modified, amide-linked uridine dimer for detecting complementary RNA and distinguishing a single U:U mismatched base pair adjacent to the

pyrene residue

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2P-20 Regulation of Gene Expression by A-to-I RNA Editing in the 5' UTR of mRNA

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2P-21 Development of new chemical phosphorylation reagents for 5'-monophosphate RNA purification

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2P-22 Evaluation of Targeted Protein Degradation by Genetically Encoded RNA-PROTACs Using a Dual Reporter System

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2P-23 Enzyme-Assisted Site-Specific Incorporation of Photoisomerizable Molecules into DNA

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2P-24 Isothermal Amplification-Driven Photoelectrochemical Biosensor for Nucleic Acid Detection

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2P-25 Cholesteryl-terminated nucleic acid aptamers enhance macrophage phagocytosis via a proximity-inducing mechanism

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2P-26 DNA origami-based multi-target detectable sensor for cellular applications

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2P-27 Screening RNA motifs for potential interactions with human metabolites

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2P-28 Establishment of an ion-pairing reagent-free LC-MS platform for nucleic acids

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2P-29 Chemical autoligation with phosphorothioate- and sulfonamide-terminated DNA via intermolecular cross-activation

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2P-30 Dissolution of ligand-induced RNA foci by visible Light

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2P-31 Synthesis of Hydrophobic-Tagged 2'-Deoxy-Modified Cap Analogs and Its Effect on mRNA Translation

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2P-32 Novel labeling method for detecting and tracking nucleic acids

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2P-33 Identification of Xrn1/Xrn2 activators involved in initiator tRNA degradation

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2P-34 Pseudo-Translational Synthesis of Dye Sequences through Non-Enzymatic Strand Elongation of Artificial Nucleic Acids

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2P-35 Construction of an RNA-FRET system with high-density assembly of multiple fluorescent RNA aptamers toward its experimental evolution

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2P-36 Graph convolutional neural networks with early integrated molecular descriptors for drug discovery: A case study on predicting small molecule targeting CAG repeat DNA

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- 2P-37 Detection of single nucleotide polymorphisms in DNA using impedance spectroscopy with DNA binding ligand**
Fumie Takeji^{1,*} Yasue Haruyama,¹ Ichiro Yamashita,² Koki Yamashita,³ Takeshi Ito,³ Chikara Dohno⁴
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- 2P-38 Visualization of G-quadruplexes in animals and tissues**
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- 2P-39 Deconvolution of CD spectra of the guanine-rich insulin aptamer: IGA3 and elucidation of its specific structure which binds to the insulin**
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- 2P-40 Novel sequences to form quadruplex nucleic acids in Dengue Virus RNA genome**
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- 2P-41 Estimation of unnatural nucleotide ratios using DNA polymerase recognition differences**
Yoshiaki Masaki,^{*} Yukiko Onishi
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- 2P-42 Systematic evaluation of secondary structure requirements in 5'-extended pegRNA**
Ayano Iwake, Yoshiaki Masaki^{*}
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- 2P-43 Development of cyclic naphthalene diimides as artificial DNA cleavage enzymes for the detection of G4 in genomes**
Yukina Sanada,¹ Satoshi Fujii,² Shigeori Takenaka,¹ Shinobu Sato^{1,*}
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- 2P-44 Development of dual DNA-binding conjugates for selective G4 targeting**
Mitsuharu Ooga,¹ Vinodh J. Sahayasheela,¹ Yuki Hirose,¹ Daisuke Sasaki,¹ Kaori Hashiya,² Toshikazu Bando,¹ Hiroshi Sugiyama^{2,*}
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- 2P-45 Enhanced Recognition of Double-Stranded DNA via Invasion with Multiple Shifted PNA Pairs**
Naoya Mochizuki,¹ Masanari Shibata,² Yuichiro Aiba,^{1,*} Kota Ito,¹ Osami Shoji^{1,*}
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- 2P-46 Effect of conjugates on binding energy of DNA/RNA duplex formation**
Renshin Sano,¹ Nae Sakimoto,² Elisa Tomita-Sudo,² Tomoka Akita,¹ Kaito Sato,¹ Yoshihiro Okada,¹ and Junji Kawakami^{1,2}
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- 2P-47 Toward an *in-droplet* experimental evolution system for group I ribozymes using the BEAMing method**
Kaede Ando,¹ Tomoki Ueda,² Misato Ueda,² Shigeyoshi Matsumura,^{1,2} Yoshiya Ikawa^{1,2,*}

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- 2P-48 Deep Generative Design of High-Efficiency Suppressor tRNAs**
Peijie Yan,^{1,2} Shunsuke Sumi,^{2,3} Hirohide Saito,^{2,3}
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- 2P-49 Truncation and Characterization of functional RNA to perform self-cleavage reaction under Low pH**
Nae Sakimoto,¹ Emily Matsusaka,² Natsuki Doi,² Taku Ishigaki,³ Shigenori Iwai,¹ and Junji Kawakami^{1,2,3,*}
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- 2P-50 Selection of equol aptamer based on base pair switching for construction of conformational switching sensor**
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- 2P-51 Nucleic acids' detection via chiroptical induction of achiral SNA structures**
Itsumi Sugiyama,¹ Takayuki Uchihashi,² Christian Ganser,² Hiroyuki Asanuma,¹ Hiromu Kashida¹
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- 2P-52 Detection of KRAS gene mutations using a cNDI-immobilized electrode for the diagnosis of pancreatic cancer**
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- 2P-53 Detection of pancreatic cancer-specific miRNAs using HCR probes containing G4 sites**
Akane Shimada, Shinobu Sato^{*}
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- 2P-54 Multiplexed imaging method based on strand displacement of acyclic XNA**
Hiromu Kashida,^{1,*} Koki Makino,¹ Hiroyuki Asanuma,^{1,*}
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- 2P-55 DNA Nanostructure-based Biomimetic Compartments for Metabolic Pathways**
Peng Lin,¹ Hui Yang,¹ Eiji Nakata,¹ Takashi Morii^{1,2,*}
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- 2P-56 Evaluation of LNA-modified DNA nanomachines under simulated cytoplasmic conditions**
Maasa Yokomori,¹ Keitaro Yoshimoto,¹ Yoko Yamanishi^{2,*}
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- 2P-57 Programmable Self-Assembly of Reconfigurable DNA Origami Nanostructures into Polygonal Shapes**
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- 2P-58 Design and Application of Mannose-6-Phosphate-Based Sugar-Ligand**

Conjugates for siRNA Therapeutics

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2P-59 Suppression of photoinduced desulfurization in PS-modified oligonucleotides

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2P-60 Engineering ordered macroscopic architectures via valance and direction controlled self-assembly of DNA-decorated hydrogels

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2P-61 Encoded Display of Chemical Libraries on Nanoparticles for Discovering Potent Protein Ligands

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2P-62 Analysis of lesions in DNA by photocatalytic oxidation reactions

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2P-63 Screening of 2'-O-Alkyl-5-methyluridines Compatible with KOD DNA Polymerase Mutant

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2P-64 Evaluation of Synthetic Strategies and Analytical Techniques for Long RNA (>100mer): Solid-Phase Synthesis vs. Enzymatic Ligation

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2P-65 Click Chemistry for Cancer MRI Imaging Using a Gadolinium(III)-DOTA Complex Functionalized with Dibenzocyclooctyne (DBCO) and a Modified Mannosamine (Ac4ManNAz)

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2P-66 αG-Rutin Mitigates DNA Oxidative Damage and Preserves Telomere Integrity

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