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

Poster Presentations Odd Numbers: November 1 (Wed) 13:35 - 14:20
Even Numbers: November 1 (Wed) 14:20 - 15:05

1P-01 **Preparation of nucleoside 3'-phosphate derivatives functionalized at 5'-position as monomer units for novel strategies to oligonucleotide synthesis**

Yoshiaki Kitamura[*1,2,3], Risa Yamaguchi[1], Natsuki Amano[1]

[1]Faculty of Engineering, Gifu University, [2]United Graduate School of Drug Discovery and Medical Information Sciences, Gifu University, [3]Center for One Medicine Innovative Translational Research (COMIT), Gifu University

1P-02 **Stabilization of DNA Triplex using Novel Psoralen-Introduced Triplex-Forming Oligonucleotides Enable the Induction of Stronger Cell Death of Human Breast Cancer Cells**

Haruki Toyama, Honoka Eshima, Juki Nakao, Yu Mikame[*], Asako Yamayoshi[*]

Graduate School of Biomedical Sciences, Nagasaki University

1P-03 **Analysis of the adduct formation of 2'-deoxyadenosine with glycidamide**

Ryota Yamaguchi, Shigenori Iwai

Department of Chemistry, Graduate School of Engineering Science, Osaka University

1P-04 **Synthesis and Enzymatic Incorporation of Fluorescent Thymidine Nucleotide Analogues**

Tomotaka Kumagai[1], Daisuke Hori[1,2], Kenta Ishida[4,5], Yuuya Kasahara[4,5], Satoshi Obika[4,5,6], Hiroshi Sugiyama[3], Soyoung Park[*2]

[1]Department of Chemistry, Graduate School of Science, Kyoto University, [2]Immunology Frontier Research Center (iFReC), Osaka University, [3]Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University, [4]Graduate School of Pharmaceutical Sciences, Osaka University, [5]National Institutes of Biomedical Innovation, Health and Nutrition (NIBIOHN), [6]Institute for Open and Transdisciplinary Research Initiatives (OTRI), Osaka University

1P-05 **Solid-Phase Synthesis of Oligodeoxynucleotides Using Nucleobase *N*-Unprotected Oxazaphospholidine Derivatives Bearing a Long Alkyl Chain**

Kiyoshi Kakuta, Ryota Kasahara, Kazuki Sato, Takeshi Wada[*]

Department of Medicinal and Life Sciences, Faculty of Pharmaceutical Sciences, Tokyo University of Science

1P-06 **Chemical synthesis of oligonucleotides using 2'-*O*-vinyl RNA phosphoramidite units**

Yuya Okawara, Ishin Ono, Yusuke Namiki, Kazushi Hisatsune, Kotaro Munakata, Koichiro Miyauchi, Akihiro Ohkubo[*]

Department of Life Science and Technology, Tokyo Institute of Technology

1P-07 **Synthesis and evaluation of (*S*)-5'-*C*-aminopropyl-2'- fluoro-modified nucleic acids for siRNA therapeutics**

Hitotaka Sato[3], Yoshihito Ueno[*1,2,3,4]

[1]Department of Life Science and Chemistry, Graduate School of Natural Science and Technology, Gifu University, [2]Course of Applied Life Science, Faculty of Applied Biological Sciences, Gifu University, [3]United Graduate School of Agricultural Science, Gifu University, [4]Center for One Medicine Innovative Translational Research (COMIT), Gifu University Institute for Advanced Study, Gifu University

1P-08 **Construction of an artificial CO_2 fixation compartment using DNA nanostructure as a scaffold**

Hui Yang[1], Peng Lin[1,2], Eiji Nakata[1,2], Takashi Morii[*1,2]

[1]Graduate School of Energy Science, Kyoto University, [2]Institute of Advanced Energy, Kyoto University

1P-09 **Strand invasion by PNA containing preQ$_1$**

Shun-suke Moriya[1], Yosuke Demizu[2], Masaaki Kurihara[3], Atsushi Kittaka[1], Toru Sugiyama[*1]

[1]Faculty of Pharma-Sciences, Teikyo University, [2]Division of Organic Chemistry, National Institute of Health Sciences, [3]Faculty of Pharmaceutical Sciences, Shonan University of Medical Sciences

1P-10 **Enhancement of gene expression level through 3'UTR conformational changes via RNA hacking**

Yua Itsuki[1], Yousuke Katsuda[*1,2], Yusuke Kitamura[1], Toshihiro Ihara[1]

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

1P-11 **Large-scale analysis of nucleic acid-protein interactions by using photocatalyst-modified nucleic acid**

Ahmed Mostafa Abdelhady[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

1P-12 **Regulation of photochemical $^1O_2$ generation by conformational change of artificial oligodeoxynucleotides**

Sae Harada, Tatsuya Nishihara, Kazuhito Tanabe[*]

College of Science and Engineering, Aoyama Gakuin University

1P-13 **The Role of Loop Region in Folding Mechanism of DNA G-quadruplexes**

Minori Nakata, Naoki Kosaka, Daisuke Miyoshi[*]

Graduate school of Frontiers of Innovative Research in Science and Technology, Konan University

1P-14 **Elucidation of the regulatory mechanism of gene expression for new imperfect G-quadruplexes**

Sunipa Sarkar[1], Hisae Tateishi-Karimata[1], Tatsuya Ohyama[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

1P-15 **Allele Specific Quantitative PCR Using Chemically Modified Primers and Proofreading Polymerases**

Masayuki Fujii, Daichi Yano, Kana Inoue

Department of Biological & Environmental Chemistry, Faculty of Humanity Oriented Science and Engineering, Kindai University

1P-16 **I-motif structure as a binding core for small fluorogens**

Tamaki Endoh[*1], Sinjan Das[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

1P-17 **High-throughput-based approach to comprehensively interrogate proximity-induced RNA alkylation**

Yutong Chen[1,2], Kazumitsu Onizuka[*1,2], Kaoru R. Komatsu[3], Emi Miyashita[3,4], Hirohide Saito[4], Fumi Nagatsugi[*1,2]

[1]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, [2]Department of Chemistry, Graduate School of Science, Tohoku University, [3]FOREST Therapeutics, [4]CiRA, Kyoto University

1P-18 **Preparation of ^{19}F-labeled oligodeoxynucleotides and their application to detection of miRNAs by ^{19}F NMR**

Yuki Hida, Tatsuya Nishihara, Kazuhito Tanabe*

Department of Science and Engineering, Graduate school of Science and Engineering, Aoyama Gakuin University

1P-19 **Development of Pyrimidine Structure-Based Alkylating Agents for Nucleic Acids Modification**

Ping-Yun Lan[1,2], Kazumitsu Onizuka[1,2], Yutong Chen[1,2], Fumi Nagatsugi[*1,2]

[1]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, [2]Graduate School of Science, Tohoku University

1P-20 **Effects of Structure and Sequence on Liquid-Liquid Phase Separation of G4 Nucleic Acids**

Sumit Shil, Mitsuki Tsuruta, Keiko Kawauchi, Daisuke Miyoshi*

Graduate school of Frontiers of Innovative Research in Science and Technology, Konan University

1P-21 **Ultralow Background One-Pot Detection of Lead(II) Using a Non-Enzymatic Double-Cycle System Mediated by a Hairpin-Involved DNAzyme**

Ran An[*1,2], Ting Yan[1], Yuying Hou[1], Qianqian Zuo[1], Difei Jiang[1], Huijie Zhao[1], Tongyue Xia[1], Xiaoqian Zhu[1], Xutiange Han[1], Xingguo Liang[1,2]

[1]College of Food Science and Engineering, Ocean University of China, [2]Laboratory for Marine Drugs and Bioproducts, Pilot National Laboratory for Marine Science and Technology

1P-22 **Investigation of important factor for efficient amplification by *ab initio* DNA synthesis**

Yuka Kataoka, Chihiro Kubo, Tomoko Wariishi, Hiroto Fujita, Masayasu Kuwahara*

Graduate School of Integrated Basic Science, Nihon University

1P-23 **Liquid-liquid phase separation of G-quadruplex is tuned by DNA cytosine methylation**

Mitsuki Tsuruta[1], Takeru Torii[1], Keiko Kawauchi[1], Naoki Sugimoto[1,2], Daisuke Miyoshi[*1]

[1]Graduate school of Frontiers of Innovative Research in Science and Technology, Konan University, [2]Frontier Institute for Biomolecular Engineering Research, Konan University

1P-24 **ROCKET: a Python tool to enhance in vitro transcription of short RNAs**

Teppei Matsuda, Hiroyuki Hori1*, Ryota Yamagami*

Department of Applied Chemistry, Graduate School of Science and Engineering, Ehime University

1P-25 **Development of a new oligonucleotide agent for site-specific RNA acetylation**

Hirotaka Murase[*1], Jeongsu Lee[2], Yosuke Taniguchi[3], Shuhei Imoto[1], Shigeki Sasaki[2]

[1]Faculty of Pharmaceutical Sciences, Sojo University, [2]Graduate School of Pharmaceutical Sciences, Nagasaki International University, [3]Graduate School of Pharmaceutical Sciences, Kyushu University

1P-26 **Development of a post-elongation modification method of phosphate backbone based on the amidation of phosphonoacetate-modified oligonucleotides**

Daiki Fujisue[1], Takashi Osawa[1], Satoshi Obika[*1,2]

[1]Graduate School of Pharmaceutical Sciences, Osaka University, [2]Institute for Open and Transdisciplinary Research Initiatives, Osaka University

1P-27 **Circularization of ssDNA without splint by formation of an intramolecular dynamic nick**

Wenhua Sun[1], Kunling Hu[1], Ran An[*1,2], Xingguo Liang[*1,2]

[1]College of Food Science and Engineering, Ocean University of China, [2]Laboratory for Marine Drugs and Bioproducts, Qingdao National Laboratory for Marine Science and Technology

1P-28 **Precise control of catalytic reaction of T4 DNA ligase to stop at the adenylation stage via dynamic nick formation**

Kunling Hu[1], Wenhua Sun[1], Ziting Song[1], Ran An[1,2], Xingguo Liang[*1,2]

[1]College of Food Science and Engineering, Ocean University of China, [2]Laboratory for Marine Drugs and Bioproducts, Qingdao National Laboratory for Marine Science and Technology

1P-29 **Artificial Liposome Compartment with DNA Origami Scaffold for Size Exclusion Molecular Transport**

Shiwei Zhang, Eiji Nakata, Peng Lin, Takashi Morii*

Institute of Advanced Energy, Kyoto University

1P-30 **A Novel Regulation Method of mRNA Using RNA Stem-Loop Motif**

Masayuki Fujii[1], Yasuo Shiohama[2]

[1]Department of Biological & Environmental Chemistry, Faculty of Humanity Oriented Science and Engineering, Kindai University, [2]Department of Organ Anatomy and Nanomedicine, Graduate School of Medicine, Yamaguchi University

1P-31 **Sequence-dependent effects on kinetic parameters of nucleic acid duplex formation**

Elisa Tomita-Sudo[1], Tomoka Akita[2], Renshin Sano[2], Ayumu Kashiwagi[2], Junji Kawakami[*1,2]

[1]Konan Laboratory for Oligonucleotide Therapeutics, [2]Department of Nanobiochemistry, FIRST, Konan University

1P-32 **Evaluation of APOBEC-catalyzed cytosine deamination for the repeat DNAs with binding small molecules binding**

Luyan Zhang[1], Tomonori Shibata[1], Asako Murata[2], Kazuhiko Nakatani[*1]

[1]Department of Regulatory Bioorganic Chemistry, SANKEN (The Institute of Scientific and Industrial Research), Osaka University, [2]Department of Material Scienses, Faculty of Engineering Sciences, Kyushu University

1P-33 **Sequences that destabilize DNA/RNA duplexes**

Shizuka Közaki[1,2,] Ayumu Kashiwagi[1], Shuichiro Fujiki[1], Tomoka Akita[1,2], Junji Kawakami[*1,2]

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

1P-34 **Twisting of i-motif DNA induced by diverse molecular crowdings**

Shuntaro Takahashi[*1], Saptarshi Ghosh[1], Marko Trajkovski[2], Pallavi Chilka[1], Tatsuya Ohyama[1], Janez Plavec[2], Naoki Sugimoto[*1,3]

[1]Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, [2]Slovenian NMR Centre, National Institute of Chemistry, [3]Graduate School of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University

1P-35 **Temporal Control of Repeat RNA Phase Transitions Induced by Photoswitchable RNA-binding Ligands**

Yusuke Fujiwara[1,2], Tomonori Shibata[1,2], Chikara Dohno[*1,2], Kazuhiko Nakatani[*1,2]

[1]SANKEN, Osaka University, [2]JST, CREST

1P-36 **Development of novel fluorescent indicators to discover new RNA-binding small molecules in FID assay based on large-scale profiles of RNA-indicator interactions**

Ryosuke Nagasawa[1,2], Kazumitsu Onizuka[1,2*] Ryohei Iwata[1,2], Kaoru R. Komatsu[3,4], Emi Miyashita[3,4], Sayaka Dantsuji[4], Hirotaka Murase[1,2], Mamiko Ozawa[1], Hirohide Saito[3], Fumi Nagatsugi[*1,2]

[1]IMRAM, Tohoku University, [2]Department of Chemistry, Tohoku University, [3]CiRA, Kyoto University, 4xFOREST therapeutics

1P-37 **Interaction between fluoroquinolone derivative KG022 and RNAs: effect of modified nucleosides in the bulged residue**

Rika Ichijo[1], Takashi Kamimura[2], Gota Kawai[*1]

[1]Chiba Institute of Technology, [2]Veritas In silico Inc.

1P-38 **Unusual topological RNA G-quadruplex formed by an RNA duplex: implications for the dimerization of SARS-CoV-2 RNA**

Shiyu Wang[1], Yi Song[1], Zhiyong He[2], Hisao Saneyoshi[1], Rie Iwakiri[1], Pengyu Xu[3], Chuanqi Zhao[4], Xiaogang Qu[4,5], Yan Xu[*1]

[1]Division of Chemistry, Department of Medical Sciences, Faculty of Medicine, University of Miyazaki, [2]State Key Laboratory of Functions and Applications of Medicinal Plants, Guizhou Medical University, [3]Shonan Laboratory, Corporate R&D Headquarters, Otsuka Chemical Co., Ltd., [4]Laboratory of Chemical Biology and State Key Laboratory of Rare Earth Resource Utilization, Changchun Institute of Applied Chemistry, Chinese Academy of Science, [5]School of Applied Chemistry and Engineering, University of Science and Technology of China

1P-39 **Interaction between a small molecule, NA, and an RNA with the ACG/AUA internal loop**

Aina Fujiwara[1], Qingwen Chen[2], Asako Murata[3], Kazuhiko Nakatani[2], Gota Kawai[*1]

[1]Department of Life Science, Faculty of Advanced Engineering, Chiba Institute of Technology, [2]Department of Regulatory Bioorganic Chemistry, The Institute of Scientific and Industrial Research, Osaka University, [3]Department of Material Sciences, Faculty of Engineering Sciences, Kyushu University

1P-40 **Development of new compounds using for gene detection**

Fumie Takei[*1], Naoki Yamada[1], Sumiyo Hiruma[1], Kaori Kamata[1], Ichiro Yamashita[2]

[1]Faculty of Medicine, National Defense Medical College (NDMC), [2]Graduate School of Engineering, Osaka University

1P-41 **Regulation of gene expression by A-to-I RNA editing that occurs in the 5' untranslated region of mRNA**

Yuki Ogata[1], Shun Shimauchi[1], Naoki Shimazu[1], Masatora Fukuda[*1,2]

[1]Department of Chemistry, Graduate School of Science, Fukuoka University, [2]Department of Chemistry, Faculty of Science, Fukuoka University

1P-42 **In Vitro Study of Aggregate Formation between CUG Repeat RNA and MBNL1 Protein**

Surachada Chuaychob[1,2], Wanqing Hou[2], Musashi Shimizu[2], Shun Nakano[2], Arivazhagan Rajendran[1,2], Eiji Nakata[1,2], Takashi Morii[*1,2]

[1]Integrated Research Center for Carbon Negative Science, Institute of Advanced Energy, Kyoto University, [2]Institute of Advanced Energy, Kyoto University

1P-43 **The methylated DNA changes the rate of strand displacement DNA polymerase amplification**

Mizuki Tomizawa, Kiwako Watanabe, Kaori Tsukakoshi, Wakako Tsugawa, Ryutaro Asano, Kazunori Ikebukuro[*]

Department of Biotechnology and Life Science, Graduate School of Engineering, Tokyo University of Agriculture and Technology

1P-44 **Unveiling Atomic-Level Insights into the Influence of Molecular Crowding Environments on Base-Pair Opening/Closing Dynamics in Parallel DNA Triplex Structures**

Tomoki Sakamoto[1,2], Yudai Yamaoki[1,2], Takashi Nagata[1,2], Masato Katahira[*1,2]

[1]Institute of Advanced Energy, Kyoto University, [2]Graduate School of Energy Science, Kyoto University

1P-45 **DNA major groove intercalation by a ruthenium(II) diiamine complex**

Tayler D. Prieto Otoya[1], Kane McQuaid[1], Georgia Menounou[2], Joseph Hennessy[2], Neil G. Paterson[3], David J. Cardin[1], Andrew Kellett[2], Christine J. Cardin[*1]

[1]Department of Chemistry, University of Reading, [2]School of Chemical Sciences, Dublin City University, [3]Diamond Light Source Ltd.

1P-46 **RNA Ligase Ribozymes with a Small Catalytic Core**

Yoko Nomura, Yohei Yokobayashi[*]

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

1P-47 **Directed Evolution of Group I Intron in Mammalian Cells**

Tomoya Noma, Yohei Yokobayashi*

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

1P-48 **Intracellular visualization of interaction between anti-miRNA oligonucleotide and its target miRNA**

Hongyu Zhu[1], Yukiko Kamiya[*1,2], Hiroyuki Asanuma[*1]

[1]Department of Biomolecular Engineering, Graduate School of Engineering, Nagoya University, [2]Laboratory of Bioanalytical Chemistry, Kobe Pharmaceutical University

1P-49 **Development of novel acyclic ESF nucleosides possessing flexible dihydroxypentyl skeleton for target DNA detection**

Satoru Yugami, Yurino Oku, Yosio Saito*

Graduate School of Engineering, Nihon University

1P-50 **Programmable Macroscopic Self-Assembly of LNA-Decorated Shape-Controlled Hydrogel Blocks**

Bochen Zhu, Yohei Yokobayashi*

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

1P-51 **Synthesis and Evaluation of Pyrrole - Imidazole Polyamide Conjugates with Pyridostatin Analogues**

Mitsuharu Ooga[1], Toshikazu Bando[*1], Hiroshi Sugiyama[*2]

[1]Department of Chemistry, Graduate School of Science, Kyoto University, [2]Institute for Integrated Cell-Material Science (WPI-iCeMS), Kyoto University

1P-52 **Screening of DNA aptamers universally bind to single-chain variable fragment (scFv) antibodies and the sensor application**

Mai Hamasaki[1], Shouhei Takamatsu[1], Madoka Nagata[2], Koji Sode[2], Kazunori Ikebukuro[1], Ryutaro Asano[*1,3]

[1]Department of Biotechnology and Life Science, Graduate School of Engineering, Tokyo University of Agriculture and Technology, [2]Joint Department of Biomedical Engineering, The University of North Carolina at Chapel Hill and North Carolina State University, [3]Institute of Global Innovation Research, Tokyo University of Agriculture and Technology

1P-53 **A new RNA platform for detecting a variety of biomolecules**

Shunsuke Kawasaki*, Takeru Kuwabara, Hirohide Saito*

Center for iPS Cell Research and Application, Kyoto University

1P-54 **Design of fluorine-containing ligands for enhancing the siRNA drug efficacy**

Arisa Kagami[1], Ai Kohata[*1], Kohsuke Aikawa[*1], Daisuke Kawaguchi[1], Kunihiko Morihiro[1], Akimitsu Okamoto[1], Takashi Okazoe[2]

[1]Department of Chemistry and Biotechnology, Graduate School of Engineering, The University of Tokyo, [2]AGC Inc. Yokohama Technical Center

1P-55 **BIVID-MaP identifies allele-specific interaction between small-molecule and RNA structure**

Emi Miyashita[1,2], Kazumitsu Onizuka[3], Yutong Chen[3], Kaho Maeta[2], Shunichi Kashida[2], Fumi Nagatsugi[*3], Hirohide Saito[*1], Kaoru R. Komatsu[*2]

[1]Center for iPS cells Research and Application, Kyoto University., [2]xFOREST Therapeutics., [3]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University

1P-56 **Design of Cationized Gelatin Carriers for mRNA Delivery**

Taichi Washisaka, Yasuhiko Tabata*

Institute for Life and Medical Sciences, Kyoto University

1P-57 **Construction of DNA-Scaffolded Long-Range Intramolecular Energy Transmission System**

Yuki Minamide, Koichi Tanimoto, Fumiaki Takano, Tomoya Niki, Shiori Tabana, Akinori Kuzuya*

Department of Chemistry and Material Engineering Kansai University

1P-58 **Diastereomeric Separation of Phosphorothioate-Modified Nucleic Acids Using Polysaccharide-Based Chiral Columns Under Ion-Pair-Free Reversed-Phase Mode**

Hideki Motoda*, Kanji Nagai, Takafumi Onishi, Atsushi Ohnishi*

Life Sciences R&D Center, PharmaTek BU, Life Sciences SBU, Daicel Corporation

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

Poster Presentations Odd Numbers: November 2 (Wed) 13:35 - 14:20
Even Numbers: November 2 (Wed) 14:20 - 15:05

2P-01 **Synthesis and Evaluation of 2'-Deoxycytidine Derivatives for the Recognition of 8-Oxo-2'-deoxyguanosine in DNA**
Yuta Chikada, Takato Sakurada, Ryo Miyahara, Yosuke Taniguchi*
Graduate School of Pharmaceutical Sciences Kyushu University

2P-02 **Formation of formamidopyrimidine derivatives from the N7-adducts of 2'-deoxyguanosine and analysis of their base pairing in duplexes**
Tomohiro Baba, Shigenori Iwai
Department of Chemistry, Graduate School of Engineering Science, Osaka University

2P-03 **One-Step Synthesis of Truncated Carbocyclic Nucleosides from Sugar-Derived Julia-Kocienski Reagents**
Natsuhisa Oka[*1,2,3], Kei Sugiura[1], Wakaba Arai[1], Minami Furuzawa[1], Mayuka Kanda[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, [3]Center for One Medicine Innovative Translational Research (COMIT), Gifu University

2P-04 **Development of a method for chemical synthesis of long DNAs in a photolithographic flow system**
Koichiro Miyauchi, Teruyuki Okaniwa, Koki Maruyama, Ishin Ono, Tatsuhiro Yokoyama, Aoma Yoshida, Akihiro Ohkubo*
School of Life Science and Technology, Tokyo Institute of Technology

2P-05 **Chemically modified nucleosides enable reversible control of gene expression via host-guest interaction**
Takeyuki Yao[1,2], Hidenori Okamura[*1,2], Fumi Nagatsugi[*1,2]
[1]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, [2]Graduate School of Science, Tohoku University

2P-06 **Orthogonal control of DNA duplex hybridization driven by host-guest interaction**
Hidenori Okamura[*1,2], Takeyuki Yao[1,2], Fumi Nagatsugi[*1,2]
[1]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, [2]Graduate School of Science, Tohoku University

2P-07 **Synthesis and enzymatic incorporation study of unnatural purine-pyridone base pairs**
Wenjue Fan[1,2], Hidenori Okamura[*1,2], Zhuoxin Dong[1,2], Giang Hoang Trinh[1,2], Fumi Nagatsugi[*1,2]
[1]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, [2]Graduate School of Science, Tohoku University

2P-08 **Multidrug-integrated mini-nucleic acid drug platform for effective chemotherapy of refractory cancer**
Ryosei Komiyama, Kunihiko Morihiro*, Akimitsu Okamoto*
Department of Chemistry and Biotechnology, Graduate School of Engineering, The University of Tokyo

2P-09 **Synthesis of guanosine 3', 5'-tetraphosphate (ppGpp) and its 2'-modified derivatives**
Kohji Seio*, Kentaro Ohno, Daiki Sugiyama, Koh Akai, Ayano Iwake, Yudai Suzuki, Yukine Suda, Yoshiaki Masaki
Department of Life Science and Technology, Tokyo Institute of Technology

2P-10 **Construction of Catalytic Target RNA Cleavage Function Installed Nucleic Acids for the Treatments of COVID-19**

Kazutoshi Fujita[1], Nozomu Ishiwata[1], Masahito Inagaki[2], Masaki Nishijima[1], Hironori Hayashi[3], Yu Mikame[4], Yasuyuki Araki[1], Tsuyoshi Yamamoto[4], Asako Yamayoshi[4], Eiichi Kodama[3], Takehiko Wada[*1]

[1]IMRAM, Tohoku Univ., [2]Grad. Sch. Sci., Nagoya Univ., [3]IRIDeS, Tohoku Univ., [4]Grad. Sch. Biomed. Sci., Nagasaki Univ.

2P-11 **Synthesis of Nucleoside Analogues with the Ability to Form Triplex DNA and Their Application to Antigene Method**

Yosuke Taniguchi[*1], Lei Wang[3], Ryotaro Notomi[1], Shigeki Sasaki[2]

[1]Graduate School of Pharmaceutical Sciences Kyushu University, [2]Graduate School of Pharmaceutical Sciences, Nagasaki International University, [3]School of Pharmacy and Jiangsu Province Key Laboratory for Inflammation and Molecular Drug Target, Nantong University

2P-12 **DNase II efficiently degrades RNA and the enzyme digestion products are available for organisms**

Jingyun Zhuang[1], Haoyu Wang[1], Xinmei Du[1], Ran An[*1,2], Xingguo Liang[*1,2]

[1]College of Food Science and Engineering, Ocean University of China, [2]Laboratory for Marine Drugs and Bioproducts, Qingdao National Laboratory for Marine Science and Technology

2P-13 **Synthesis and property of GalNAc-modified dumbbell-shaped decoy oligonucleotides for artificial control of HNF-4α**

Hiromu Ueno, Kaito Takashima, Kanae Sato, Yusuke Inoue, Nozomi Ishii, Ichiro Matsuo, Tomohisa Moriguchi[*]

Graduate School of Science and Technology, Gunma University

2P-14 **Improvement of G-quadruplex-forming DNA aptamer for α-synuclein oligomer by loop modification**

Akari Sato, Kaori Tsukakoshi[*], Kazunori Ikebukuro[*]

Department of Biotechnology and Life Science, Graduate School of Engineering, Tokyo University of Agriculture and Technology

2P-15 **Effects of intracellular molecular environments during cancer progression on i-motif formations**

Kun Chen[1], Hisae Tateishi-Karimata[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

2P-16 **Interstrand-crosslinking using 2’-deoxythioguanosine-containing oligonucleotides**

Jamila Osman[1,2], Kazumitsu Onizuka[*1,2], Yuuhei Yamano[1,2], Ahmed Mostafa Abdelhady[1,2], Fumi Nagatsugi[*1,2]

[1]Institute of Multidisciplinary Research for Advanced Materials, [2]Graduate School of Science, Tohoku University

2P-17 **Formation of pseudorotaxane and catenane structures using novel cyclized oligodeoxynucleotides**

Kazuki Kuwahara[1,2], Kazumitsu Onizuka[*1,2], Sayaka Yajima[1,2,] Yuuhei Yamano[1], Fumi Nagatsugi[*1,2]

[1]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University [2]Department of Chemistry, Graduate School of Science, Tohoku University

2P-18 Synthesis of artificial nucleotide strands containing modified bases by various DNA polymerase variants

Rei Katou[1], Kouki Tajiri[1], Erika Nagatani[1], Hidekazu Hoshino[2], Yuuya Kasahara[2,3], Satoshi Obika[2,3,4], Yuka Kataoka[1], Masayasu Kuwahara[*1]

[1]GraduateSchoolofIntegratedBasicSciences,NihonUniversity, [2]National Institutes of Biomedical Innovation,Health and Nutrition, [3]Graduate School of Pharmaceutical Sciences, Osaka University, [4]Institute for Open and Transdisciplinary Research Initiatives, Osaka University

2P-19 Synthesis and fluorescent property of 2'-*O*-methyl RNA containing amide-linked RNA modified with pyrene at the 2'-position

Reiko Iwase[*], Fumiya Ikeda, Masatoshi Kadomatsu, Miki Hayakawa, Gaku Nakajima, Miki Ando, Misaki Hashimoto

Department of Life & Health Sciences, Faculty of Life & Environmental Sciences, Teikyo University of Science

2P-20 Accumulation behaviors for GGGGCC-repeated RNA with peptide repeats estimated by molecular dynamics simulations

Tatsuya Ohyama[1], Hisae Tateishi-Karimata[1], Shigenori Tanaka[2], Chiduru Watanabe[3], Teruki Honma[3], Naoki Sugimoto[*1,4]

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2P-21 Drug Strategies for Selective Cancer Treatment Using Stimuli-Responsive Artificial Nucleic Acids

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2P-22 Study on read-through of premature termination codon by site-specific chemical modification

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2P-23 Development of a multiple-target detectable sensor based on DNA nanostructure

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2P-24 Creation of base flipping-out structures on DNA and RNA using carbazole-modified thymidine analogs

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2P-25 Development of pseudo-cellular systems to understand G-quadruplex behaviors in cancer progression

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2P-26 **NMR determination of the binding mode of naphthyridine carbamate dimer (NCD) to CGG repeat DNA**

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2P-27 **Photooxidation of guanine in duplexes by various biphenyl photosensitizer-oligonucleotide conjugates and their sensitizing mechanisms**

Takashi Kanamori[*], Shota Kaneko, Yaoyao Du, So Nemoto, Nanai Yoshida, Masashi Ozawa, Hideya Yuasa[*]

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2P-28 **Biochemical applications of long polynucleotides prepared with terminal deoxynucleotidyl transferase**

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2P-29 **Bioconjugation reaction of nucleoside derivatives by water-soluble nanoparticles possessing photoredox catalysis**

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2P-30 **Construction of DNA-RNase H conjugates using photo-cross-linking ODNs**

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2P-31 **Cu(II)-responsive Allosteric DNAzyme Prepared by Enzymatic Ligation of 5-Carboxyuracil Oligomers**

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2P-32 **Development of PROTAC ligands for G-quadruplex binding proteins**

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2P-33 **Studies on Molecular Design and Synthesis of Chimeric Artificial Nucleic Acids (CANA) for Increasing the Catalytic Turnover Number of RNase H Mediated Target RNA Cleavage: Towards Pancreatic Cancer Treatment**

Yuto Horiuchi[1], Nozomu Ishiwata[1], Kazutoshi Fujita[1], Masaki Nishijima[1], Yasuyuki Araki[1], Masaki Sato[2], Mitsuyo Matsumoto[2], Kazuhiko Igarashi[2], Takehiko Wada[*1]

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2P-34 **Topological Capture of mRNA for Silencing Gene Expression**

Yasuaki Kimura[*1], Takashi Tomita[1], Fangjie Lyu[1], Naoko Abe[1], Haruka Hiraoka[1], Fumitaka Hashiya[1], Yuko Nakashima[1], Shiryu Kajihara[1], Fumiaki Tomoike[1], Kazumitsu Onizuka[2], Hiroshi Abe[*1,3,4]

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2P-35 **Development of intracellular sequence-specific DNA photocrosslinking by photochemical double duplex invasion DNA**

Kenzo Fujimoto*, Shigetaka Nakamura, Toya Odai, Zumila Hailili, Junling Mo, Toshifumi Tsukahara

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2P-36 **400 mer Double Duplex Invasion Via Ultra-Fast DNA Photo-Cross-Linking**

Zumila Hailili, Yasuha Watanabe, Toya Odai, Siddhant Sethi, Kenzo Fujimoto*

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2P-37 **Precise control for the formation of various topoisomers of a short dsDNA by using corresponding DNA scaffolds**

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2P-38 **Development an artificial nucleoside capable of recognizing ^{5m}CG and CG base pairs and new application studies of triplex DNA**

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2P-39 **Development of pyrrole-imidazole polyamides that target CCTG/CAGG repeat DNA in Myotonic Dystrophy Type 2**

Karen Kobayashi[1], Junnosuke Hatanaka[1], Kaori Hashiya[1], Hiroshi Sugiyama[*2], Toshikazu Bando[*1]

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2P-40 **Photocontrol of ribozyme structure and function by the photoresponsive RNA binder**

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2P-41 **A novel bimolecular left-handed quadruplex DNA association by the binding of mercury ion to thrombin binding aptamer**

Yui Miyahara[1], Kohsei Sekiya[1], Jiro Kondo[2], Hidetaka Torigoe[*1]

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2P-42 **Development of quadruplex nucleic acid-based methods to artificially repress target gene expression**

Hanako Takahashi, Hidetaka Torigoe*

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2P-43 **Regulation effect of structure-selective G-quadruplex ligand on telomere length-TERRA expression relationship**

Yoshiki Hashimoto[1], Keiko Kawauchi[1], Hisae Tateishi-Karimata[2], Naoki Sugimoto[1,2], Daisuke Miyoshi[*1]

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2P-44 **Development of a Novel Synthetic Ligand to Visualize the Mitochondrial G-quadruplex**

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2P-45 **BasePairPuzzle: Molecular models to understand the concept of base pairing**

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2P-46 **Ligation reaction on Capped RNA substrates by a Ligase Ribozyme**

Nae Sakimoto[1], Riki Hatakenaka[2], Emily Matsusaka[2], Natsuki Doi[2], Akane Kiyose[2], Junji Kawakami[*1,2]

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2P-47 **High-throughput analysis/screening of methyltransferase ribozymes by mutational profiling**

Ryota Yamagami[*], Takumi Wada, Tsuyoshi Morita, Hina Kubota, Hiroyuki Hori

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2P-48 **Substrate tethered oligodeoxynucleotides for the comprehensive analysis of aminopeptidase activities**

Reoto Mio, Tatsuya Nishihara, Kazuhito Tanabe[*]

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2P-49 **Three-dimensional DNA hexagonal prisms for cascaded enzyme reactions**

Peng Lin[1], Hui Yang[2], Eiji Nakata[1], Takashi Morii[*1]

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2P-50 **Generation of an RNA aptamer neutralizing dengue viruses by SELEX method targeting virus like particles and advanced *in silico* analyses**

Ryo Amano[1], Akiya Michishita[2], Ryota Nakano[2], Akiko Ichinose[2], Kazumi Haga[3], Meng Ling Moi[3], Michiaki Hamada[2], Yoshikazu Nakamura[1, 4], Masaki Takahashi[*1]

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2P-51 **Selective capturing and release of cancer cells using an anti-EpCAM aptamer-modified microfilter**

Yusuke Kitamura[*1], Kazane Chijiiwa[1], Shota Kawabe[1], Yuta Nakashima[1], Keiichiro Yasuda[2], Masaaki Iwatsuki[3], Yousuke Katsuda[1], Hideo Baba[3], Yoshitaka Nakanishi[1], Toshihiro Ihara[*1]

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2P-52 **G-quadruplex Genome-wide mapping using biotin-modified cyclic naphthalene diimide derivatives**

Shinobu Sato[1], Satoshi Fujii[2], Ryuki Hidaka[1], Ruka Tamuta[1], Shigeori Takenaka[*1]

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2P-53 **Hierarchical self-assembly of multi-stimuli-responsive DNA origami nanoactuator**

Shin Watanabe[1], Reo Toho[1], Ibuki Kawamata[2], Yuki Suzuki[*1]

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2P-54 **Multi-reconfigurable DNA nanodevice actuated by the combination of orthogonal signals**

Yuki Suzuki[*1], Kotaro Watanabe[2], Yuri Kobayashi[1], Ibuki Kawamata[2], Satoshi Murata[2]

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2P-55 **Oligonucleotides are directly assimilated by yeast as an excellent nitrogen source and promote nucleoside utilization**

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2P-56 **Fluorescence imaging of nucleic acid quadruplex structure using D3A-type quinone-cyanine fluorescent dyes**

Takashi Sakamoto[*1], Yuka Muraoka[1], Zehui Yu[2], Mayuko Kawatake[2]

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2P-57 **Spontaneous division of information and function during *in quasi-cell* RNA evolution**

Shigeyoshi Matsumura[*], Kaishu Terada, Yoshiki Hirota, Motochika Ehara, Yoshiya Ikawa

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2P-58 **The Chimera Approach to Functional Nucleobase Modifications in PNA**

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