

List of Poster Presentations on Day 2 (November 11 (Thu))

Poster Presentations Odd Numbers: November 11 (Thu.) 13:30 – 14:15
Even Numbers: November 11 (Thu.) 14:15 – 15:00

- 1P-01 Synthesis of an amide-linked dinucleotide containing a 3', 4'-bridged nucleic acid and duplex-forming ability of their modified oligonucleotides**
Taiki Akino,¹ Takashi Osawa,¹ Satoshi Obika^{1,*}
¹Graduate School of Pharmaceutical Sciences, Osaka University
- 1P-02 Synthesis and evaluation of C-nucleotide derivatives**
Ryo Miyahara, Yosuke Taniguchi*
Graduate School of Pharmaceutical Sciences, Kyushu University
- 1P-03 Solid-phase oligonucleotide synthesis using a universal linker with bicyclo[2.2.2]octane-2.3-diol skeleton**
Kazuki Yamamoto,¹ Yasufumi Fuchi,¹ Yuta Ito,¹ Yoshiyuki Hari^{1*}
¹Faculty of Pharmaceutical Sciences, Tokushima Bunri University
- 1P-04 Development of aminonebularine derivatives for the recognition of duplex DNA including a 5-methyl CG base pair in an antiparallel triplex DNA**
Ryotaro Notomi¹, Lei Wang¹, Shigeki Sasaki², Yosuke Taniguchi^{1*}
¹Graduate School of pharmaceutical Science, Kyushu University, ²Faculty of Pharmaceutical Science, Nagasaki International University
- 1P-05 Synthesis of *N*- β -enaminocarbonyl 2-oxazolidinones through ring transformation reactions of uracils**
Yoshiaki Kitamura,^{1,2,*} Yuto Ohshima,² Yuki Nagaya,³ Masato Ikeda^{1,2,3,4}
¹Faculty of Engineering, Gifu University, ²Graduate School of Natural Science and Technology, Gifu University, ³United Graduate School of Drug Discovery and Medical Information Sciences, Gifu University, ⁴Institute for Glyco-core Research (iGCORE)
- 1P-06 Synthesis and Evaluation of (*S*)-5'-C-Aminopropyl and (*S*)-5'-C-Aminopropyl-2'-arabinofluoro-modified DNAs**
Yujun Zhou,¹ Ryohei Kajino,² Yoshihito Ueno^{1,2,3,4*}
¹Graduate School of Natural Science and Technology, Gifu University, ²United Graduate School of Agricultural Science, Gifu University, ³Faculty of Applied Biological Sciences, Gifu University, ⁴Center for Highly Advanced Integration of Nano and Life Sciences (G-CHAIN), Gifu University
- 1P-07 Synthesis of tetrphosphate nucleoside analogues for polymerase substrate**
Mayu Nakamura,¹ Masahito Inagaki,¹ Hirotaka Murase,¹ Shunichi Kato,¹ Shogo Hasegawa,¹ Fumitaka Hashiya,² Yasuaki Kimura,¹ Hiroshi Abe^{1,3,4,*}
¹Graduate School of Science, Nagoya University, ²Research Center for Material Science, ³CREST, Japan Science and Technology Agency, ⁴Institute for Glyco-core Research (iGCORE)
- 1P-08 Synthesis of the exocyclic methylene and methyl analogs of 2'-O,4'-C-ethylene-bridged 5-methyluridine and properties of the modified oligonucleotides**
Yuta Ito, Kodai Nishida, Norika Tsutsui, Yasufumi Fuchi, Yoshiyuki Hari*
Faculty of Pharmaceutical Sciences, Tokushima Bunri University
- 1P-09 Synthesis of cyclodextrin modified oligonucleotides**
Kaito Suzuki,¹ Shoji Fujiwara,¹ Akira Ono^{1,*}
¹Department of Materials & Life Chemistry, Faculty of Engineering, Kanagawa University

- 1P-10 Phosphorylation of nucleotide analogs based on the activation of phosphorothioate group**
Shogo Hasegawa,¹ Masahito Inagaki,¹ Yasuaki Kimura,¹ Hiroshi Abe^{1,2,3,*}
¹Graduate School of Science, Nagoya University, ²CREST, Japan Science and Technology Agency, ³Institute for Glyco-core Research (iGCORE)
- 1P-11 Synthesis and structure formations of oligonucleotides carrying functional groups on pyrimidine bases**
Riyo Marui,¹ Yuto Nakazawa,¹ Minami Matsumoto¹, Akira Ono^{1*}
¹Department of Materials & Life Chemistry, Faculty of Engineering, Kanagawa University
- 1P-12 Development of reduction sensitive protecting groups for oligonucleotide synthesis**
Kenta Hyugai,¹ Yuya Shinkai,¹ Tatsuya Kemmoku¹, Akira Ono^{1*}
¹Department of Materials & Life Chemistry, Faculty of Engineering, Kanagawa University
- 1P-13 Synthesis of oligonucleotides with lipophilic residues via 2'-O-carbamoyl ethyl linker for providing 3'-exonuclease resistance and duplex stability**
Takahito Tomori,¹ Tomohiro Kishimura,¹ Koya Uekusa,¹ Aya Koyama,¹ Yuki Erikawa,¹ Yoshiaki Masaki,^{1,2} Kohji Seio^{1,*}
¹Department of Life Science and Technology, Tokyo Institute of Technology, ²JST PRESTO
- 1P-14 Solid-phase synthesis of oligoribonucleoside boranophosphates using the H-boranophosphonate method**
Hiromasa Matsuda,^{1,2} Kazuki Sato,¹ Hiroaki Ito¹, Tomohito Shuto³, Rintaro Hara^{1,4}, Takeshi Wada^{1,*}
¹Faculty of Pharmaceutical Sciences, Tokyo University of Science, ²CMC Production Technology Laboratories, MTPC Production Technology & Supply Chain Management Division, Mitsubishi Tanabe Pharma Corporation, ³Graduate School of Frontier Sciences, The University of Tokyo, ⁴Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University
- 1P-15 Synthesis and Properties of 4'-ThioLNA/BNA**
Toshiki Miyazawa,¹ Rion Maeda,² Noriko Saito-Tarashima,¹ Yuichi Yoshimura,² Noriaki Minakawa^{1*}
¹Graduate School of Pharmaceutical Science, Tokushima University, ²Faculty of Pharmaceutical Sciences, Tohoku Medical and Pharmaceutical University
- 1P-16 Base recognition of N-acetyl-2,6-diaminoquinoline incorporated into an antiparallel TFO**
Gaohong Tu,¹ Shuhei Nishizawa,² Akihiro Ohkubo^{1*}
¹Life Science and Technology, Tokyo Institute of Technology
- 1P-17 Development of Nucleoside-Based FRET Pair and Incorporation into Nucleosome**
Shingo Hirashima¹, Soyoung Park^{2*}, Hiroshi Sugiyama^{1,3*}
¹Department of Chemistry, Graduate School of Science, Kyoto University, ²Department of Genome Informatics, Immunology Frontier Research Center (iFReC), Osaka University, ³Institute for Integrated Cell Material Science (WPI-iCeMS)
- 1P-18 Synthesis and Application of a ¹⁹F-labeled Fluorescent Nucleoside as a Dual-mode Probe for i-Motif DNA**
Wen Ann Wee,¹ Ji Hye Yum,¹ Shingo Hirashima,¹ Hiroshi Sugiyama,^{1,2,*} Soyoung Park^{3,*}
¹Department of Chemistry, Graduate School of Science, Kyoto University, ²Institute for Integrated Cell-Material Sciences (WPI-iCeMS), Kyoto University, ³Department of Genome Informatics, Immunology Frontier Research Center (iFReC), Osaka University

1P-19 Development of Molecular Rotor-Type Fluorescent Thymidine Analogue by Introducing a C–C Double Bond

Tomotaka Kumagai,¹ Shingo Hirashima,¹ Hiroshi Sugiyama,^{1,2,*} Soyoung Park^{3,*}

¹Department of Chemistry, Graduate School of Science, Kyoto University, ²Institute for Integrated Cell-Material Sciences (WPI-iCeMS), Kyoto University, ³Department of Genome Informatics, Immunology Frontier Research Center (iFRc), Osaka University

1P-20 Covalent-binding aptamer: a new covalent drug modality for control of irreversible inhibition activity

Yudai Tabuchi,^{1,2} Jay Yang,^{1,2,3,*} Masumi Taki^{1*}

¹Department of Engineering Science, The University of Electro-Communications, ²University of Wisconsin-Madison, ³Department of GI Surgery II, Hokkaido University

1P-21 Evaluation of the DNA interstrand cross-linking of novel psoralen-conjugated triplex-forming oligonucleotides

Yu Mikame,¹ Juki Nakao,¹ Tsuyoshi Yamamoto,¹ Asako Yamayoshi^{1*}

¹Graduate School of Biomedical Sciences, Nagasaki University

1P-22 Radiation-activated oligodeoxynucleotides possessing thiothymidine unit that were tethered with alkyl chain via disulfide bond

Shuhei Sugimoto,¹ Tatsuya Nishihara,¹ Kazuhito Tanabe^{1,*}

¹College of Science and Engineering, Aoyama Gakuin University

1P-23 Indirect ubiquitination for targeted degradation of the transcription factor

Ryoka Fujita,¹ Takafumi Furuhata,¹ Yuto Matsumura,¹ Tokiha Ozawa,¹ and Akimitsu Okamoto^{1,2,*}

¹Department of Chemistry and Biotechnology, Graduate School of Engineering, The University of Tokyo, ²Research Center for Advanced Science and Technology, The University of Tokyo

1P-24 Chemical synthesis and evaluation of 4'-thiomodified cyclic dinucleotides

Mao Kinoshita, Noriko Saito-Tarashima, Noriaki Minakawa*

Graduate School of Pharmaceutical Science, Tokushima University

1P-25 Next generation nucleic-acid medicine that suppresses gene expression by the induction of RNA structure

Tomoki Kida,¹ Yousuke Katsuda,^{1,*} Takuto Kamura,¹ Yusuke Kitamura,¹ Masaki Hagihara,² Shin-ichi Sato,³ Toshihiro Ihara¹

¹Faculty of Advanced Science and Technology, Kumamoto University, ²Faculty of Science and Technology, Hirosaki University, ³Institute for Chemical Research, Kyoto University

1P-26 Reactivity modulation of reactive OFF-ON type alkylating agents for G-quadruplex structures

Yutong Chen, Kazumitsu Onizuka, Madoka Eurika Hazemi, Fumi Nagatsugi*

Institute of multidisciplinary research for Advanced Materials, Tohoku University

1P-27 Synthesis of Creation of interstrand cross-linked nucleic acids and their application for miRNA inhibition

Ahmed Mostafa Abdelhady,^{1,2} Kazumitsu Onizuka,^{1,2*} Yu Hirano,³ Yasuo Komatsu,³ Fumi Nagatsugi^{1,2,*}

¹Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, ²Department of Chemistry, Graduate School of Science, Tohoku University, ³Bioproduction Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)

- 1P-28 Hydration parameters in nearest-neighbor model enables stability prediction for compositionally biased DNA duplexes in molecular crowding conditions**
Saptarshi Ghosh¹, Shuntaro Takahashi,¹ Naoki Sugimoto^{1,2,*}
¹Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, ²Graduate School of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University
- 1P-29 Synthesis Enhancing the Stability of 2D DNA Origami by Enzymatic Ligation**
Kirankumar Krishnamurthy¹, Arivazhagan Rajendran,¹ Eiji Nakata,¹ Takashi Morii^{1,*}
¹Institute of Advanced Energy, Kyoto University
- 1P-30 Development of novel FRET-based oligonucleotide probes for target DNA detection**
Yurino Oku, Shoutoku Koboku, Yoshio Saito*
¹Department of Chemical Biology and Applied Chemistry, College of Engineering, Nihon University
- 1P-31 Metal Nanoparticles Induced Strand Cleavage of Oligonucleotides for Genome-Scale DNA Synthesis**
Masahito Inagaki¹, Haruka Hiraoka,¹ Mikiya Kase,¹ Fumitaka Hashiya,^{1,2} Naoko Abe,¹ Yasuaki Kimura,¹ Hiroshi Abe^{1,3,4,*}
¹Department of Chemistry, Graduate School of Science, Nagoya University, ²Research Center for Materials Science, Nagoya University, ³JST CREST, ⁴Institute for Glyco-core Research (iGCORE)
- 1P-32 Development of DNA/RNA editing with site-specific C->U conversion using reversible photo-cross-linking**
Jun-ichi Mihara, Kanako Ishino, Shigetaka Nakamura, Kenzo Fujimoto*
¹School of Advanced Science and Technology, Japan Advanced Institute of Science and Technology
- 1P-33 Regulation of circular RNA biogenesis via nucleic acid binding small molecule in cells**
Lu Ni¹, Takeshi Yamada,¹ Asako Murata,¹ Kazuhiko Nakatani,^{1,*}
¹Department of Regulatory Bioorganic Chemistry, SANKEN (The Institute of Scientific and Industrial Research), Osaka University
- 1P-34 Selective uptake of oligodeoxynucleotides into hypoxic cells: molecular design of modified nucleobase that was activated by nitroreductase**
Takuto Kikuchi¹, Tatsuya Nishihara¹, Kazuhito Tanabe^{1,*}
¹Graduate School of science and Engineering, Aoyama Gakuin University
- 1P-35 Preparation of oligonucleotides carrying thiol groups: Formation and cleavage of disulfide bonds**
Tomoki Mikami¹, Akihiro Funama,¹ Akira Ono^{1,*}
¹Department of Materials & Life Chemistry, Faculty of Engineering, Kanagawa University
- 1P-36 Conformational changes of DNA-ligand complexes for selective recognition of target cells**
Risa Yamada¹, Shuhei Moritani,¹ Tatsuya Nishihara,¹ Kazuhito Tanabe^{1,*}
¹College of Science and Engineering, Aoyama Gakuin University
- 1P-37 Design of DNA sequence-specific modular adaptors by tuning the reactivity of protein-tag substrate**
Zhengxiao Zhang¹, Eiji Nakata,¹ Dinh Huyen,¹ Masayuki Saimura,¹ Kazunari Matsuda,¹ Takashi Morii^{1,*}
¹Institute of Advanced Energy, Kyoto University

1P-38 Visualization of Cellular G-quadruplexes using a Novel Fluorescent G-quadruplex Ligand

Ayano Sasaki,¹ Shunsuke Ishida,¹ Takayoshi Arai,¹ Keisuke Iida^{1,*}

¹Soft Molecular Activation Research Center (SMARC), Chiba Iodine Resource Innovation Center (CIRIC), Molecular Chirality Research Center (MCRC), and Department of Chemistry, Graduate School of Science, Chiba University

1P-39 Structure-Activity Relationships of Cytotoxic Platinum(II)-Salphen Complexes as G-Quadruplex Ligands

Natsumi Suzuki,¹ Takayoshi Arai,¹ Keisuke Iida^{1,*}

¹Soft Molecular Activation Research Center (SMARC), Chiba Iodine Resource Innovation Center (CIRIC), Molecular Chirality Research Center (MCRC), and Department of Chemistry, Graduate School of Science, Chiba University

1P-40 Synthesis of Reversible Binding of Triplex-forming Oligonucleotides Based on Metal Complexation of 5-Hydroxyuracil Nucleobases

Keita Mori,¹ Kotaro Nishiyama,¹ Yusuke Takezawa,¹ Mitsuhiko Shionoya^{1,*}

¹Department of Chemistry, Graduate School of Science, The University of Tokyo

1P-41 Dimerization of COVID-19 mRNA formed by an unusual topological RNA G-quadruplex

Yi Song, Shiyu Wang, Yan Xu*

¹Division of Chemistry, Department of Medical Sciences, Faculty of Medicine, University of Miyazaki

1P-42 Detection of DNA triplex structures in living human cells by in-cell NMR

Tomoki Sakamoto,^{1,2} Yudai Yamaoki,^{1,2} Takashi Nagata,^{1,2} Masato Katahira^{1,2,*}

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

1P-43 Structure-based derivatization of berberine to improve its RNA binding affinity

Sagar Satpathi,¹ Tamaki Endoh,¹ Yutong Chen,² Saki Matsumoto,¹ Tatsuya Ohyama,¹ Peter Podbevšek,³ Janez Plavec,^{3,4,5} Kazumitsu Onizuka,² Fumi Nagatsugi,² Naoki Sugimoto^{1,6*}

¹Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, ²Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, ³Slovenian NMR Centre, National Institute of Chemistry, ⁴EN→FIST Centre of Excellence, ⁵Faculty of Chemistry and Chemical Technology, University of Ljubljana, ⁶Graduate School of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University

1P-44 N,N'-diheteroaryl guanidine derivatives targeting GGCCC repeat DNA

Eitaro Murakami,¹ Tomonori Shibata,¹ Megumi Tomemori,² Gota Kawai,² Kazuhiko Nakatani^{1,*}

¹Department of Regulatory Bioorganic Chemistry, SANKEN (the Institute of Science and Industrial Research), Osaka University, ²Department of Life and Environmental Sciences, Faculty of Engineering, Chiba Institute of Technology

1P-45 Intermediate structure in the binding of naphthyridine dimer to d(CGG) triad revealed by NMR

Shuhei Sakurabayashi,^{1,2} Kyoko Furuita,² Takeshi Yamada,¹ Toshimichi Fujiwara,² Kazuhiko Nakatani¹, and Chojiro Kojima^{2,3,*}

¹Department of Regulatory Bioorganic Chemistry, SANKEN, Osaka University, ²Institute for Protein Research, Osaka University, ³Graduate School of Engineering Science, Yokohama National University,

1P-46 Interaction between DANP and a DNA hairpin with a C bulge residue

Megumi Tomemori¹, Konami Nagano², Shuhei Sakurabayashi³, Eitaro Murakami³, Kazuhiko Nakatani³, Gota Kawai^{1,2,*}

¹Department of Life Science, Faculty of Advanced Engineering, Chiba Institute of Technology, ²Department of Life and Environmental Sciences, Graduate School of Engineering, Chiba Institute of Technology, ³Department of Regulatory Bioorganic Chemistry, The Institute of Scientific and Industrial Research, Osaka University

- 1P-47 Interaction between NCD and an RNA hairpin derived from human pre-miR-4469**
Ayano Yazaki¹, Denaly Cab², Konami Nagano², Shuhei Sakurabayashi³, Eitaro Murakami³, Kazuhiko Nakatani³, Gota Kawai^{1,2,*}
¹Department of Life Science, Faculty of Advanced Engineering, Chiba Institute of Technology, ²Department of Life and Environmental Sciences, Graduate School of Engineering, Chiba Institute of Technology, ³Department of Regulatory Bioorganic Chemistry, The Institute of Scientific and Industrial Research, Osaka University
- 1P-48 SERS-Based detection of intracellular oligonucleotides by using acetylene-tagged Hoechst molecules**
Hiroki Makanai,¹ Tatsuya Nishihara,¹ Kazuhito Tanabe^{1,*}
¹College of Science and Engineering, Aoyama Gakuin University
- 1P-49 Synthesis of benzo[a]pyrene-modified probes for imaging of endogenous mRNAs with a point mutation**
Yu Watari, Kaito Nakatani, Tomonori Waku, Akio Kobori*
Graduate school of science and technology, Kyoto Institute of Technology
- 1P-50 DNA nanostructure-based fluorescent pH sensor for cellular pH change**
Khongorzul Gerelbaatar,¹ Eiji Nakata,¹ Hisaaki Hirose,² Shiroh Futaki,² Takashi Morii^{1*}
¹Institute of Advanced Energy, Kyoto University, ²Institute for Chemical Research, Kyoto University
- 1P-51 DNA Origami as a Scaffold to Assemble Membrane Proteins on an Artificial Compartment**
Shiwei Zhang,¹ Eiji Nakata,¹ Takashi Morii^{1,*}
¹Institute of Advanced Energy, Kyoto University
- 1P-52 Photocontrolled Assembly of DNA origami Nanostructures using Photoswitching Molecules**
Shubham Mishra,¹ Soyoung Park,² Tomoko Emura,¹ Kumi Hidaka,¹ Ganesh N. Pandian,³ Hiroshi Sugiyama,^{1,3,*} Masayuki Endo^{3,4,*}
¹Department of Chemistry, Graduate School of Science, Kyoto University, ²Department of Genome Informatics, Immunology Frontier Research Center (iFRc), Osaka University, ³Institute for Integrated Cell-Material Sciences (WPI-iCeMS), Kyoto University, ⁴Organization for Research and Development of Innovative Science and Technology, Kansai University
- 1P-53 Construction of Reconfigurable DNA Nanolattice Responding to Signal DNAs**
Kotaro Watanabe,¹ Ibuki Kawamata,^{1,2} Yuki Suzuki,^{1,3,*} Satoshi Murata^{1,*}
¹Department of Robotics, Graduate School of Engineering, Tohoku University, ²Natural Science Division, Faculty of Core Research, Ochanomizu University, ³Frontier Research Institute for Interdisciplinary Sciences, Tohoku University
- 1P-54 Construction of a RubisCO assembly on 3D DNA scaffold**
Hiroaki Konishi,¹ Dinh Huyen,² Eiji Nakata,^{1,2} Haruyuki Atomi,³ Takashi Morii,^{1,2,*}
¹Graduate School of Energy Science, Kyoto University, ²Institute of Advanced Energy, Kyoto University, ³Graduate School of Engineering, Kyoto University
- 1P-55 Construction of Optical Control System for Functional Biomolecules using DNA Origami Structure**
Katsuhiko Abe,¹ Ganesh N. Pandian,² Hiroshi Sugiyama^{1,2,*}, Masayuki Endo^{2,3,*}
¹Department of Chemistry, Graduate School of Science, Kyoto University, ²Institute for Integrated Cell-Material Sciences (WPI-iCeMS), Kyoto University, ³Organization for Research and Development for Innovative Science and Technology, Kansai University

1P-56 Design of a multifunctional receptor system controlled by DNA aptamers

Hanrui Liu,¹ Ryosuke Ueki,^{1,*} Shinsuke Sando^{1,*}

¹Department of Chemistry & Biotechnology, School of Engineering, The University of Tokyo

1P-57 A DNA aptamer with high specificity for fibroblast growth factor receptor 1

Junya Hoshiyama,¹ Yuga Okada,¹ Yuri Hayata,¹ Akihiro Eguchi,¹ Ryosuke Ueki,^{1,*} Shinsuke Sando^{1,*}

¹Department of Chemistry & Biotechnology, School of Engineering, The University of Tokyo

1P-58 A novel DNA aptamer targeting growth factor receptor and its characterization

Seojung Cho¹, Ayaka Ueki¹, Ryosuke Ueki^{1,*}, Shinsuke Sando^{1,*}

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List of Poster Presentations on Day 3 (November 12 (Fri))

Poster Presentations	Odd Numbers:	November 12 (Fri.)	13:30 – 14:15
	Even Numbers:	November 12 (Fri.)	14:15 – 15:00

- 2P-59 G-quadruplex formation in cancer cells with different expression level of ion channels**
Hisae Tateishi-Karimata,¹ Naoki Sugimoto^{1,2,*}
¹Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, ²Graduate School of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University
- 2P-60 Application of nearest-neighbor model to the stability prediction of i-motif DNAs**
Pallavi Chilka,¹ Shuntaro Takahashi,¹ Naoki Sugimoto^{1,2,*}
¹Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, ²Graduate School of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University
- 2P-61 Searching for factors that regulate i-motif structure by using ligand-directed protein labeling oligonucleotides**
Yuki Ban, Yuma Terai, Risa Matsumura, Shigenori Iwai, Junpei Yamamoto*
Graduate School of Engineering Science, Osaka University
- 2P-62 Triplex-forming peptide nucleic acid inhibits maturation of endogenous miRNA**
Tamaki Endoh,¹ Nikita Brodyagin,² Dzyyana Hnedzko,² Eriks Rozners,² Naoki Sugimoto^{1,3,*}
¹Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, ²Department of Chemistry, Binghamton University, The State University of New York, ³Graduate School of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University
- 2P-63 Photo-cross-linking behaviors of psoralen-conjugated triplex forming oligonucleotides**
Juki Nakao¹, Honoka Eshima¹, Yu Mikame¹, Misaki Matsuo¹, Tsuyoshi Yamamoto¹, Chikara Dohno², Takehiko Wada³, Asako Yamayoshi^{1*}
¹Grad. Sch. Biomed. Sci., Nagasaki Univ., ²Inst. of Sci. Indust. Res., Osaka Univ., ³Inst. of Multi-discip. Res. for Adv. Mater., Tohoku Univ.
- 2P-64 Enzymatic preparation of fluorescent DNA functionalized with perylenediimide derivatives**
Yuuna Yamamoto, Tadao Takada,* Ami Takata, Mitsunobu Nakamura, Kazushige Yamana
Department of Applied Chemistry, Graduate School of Engineering, University of Hyogo
- 2P-65 Solid-phase Synthesis of 2'-O-Methyl RNA Containing Amide-linked RNA Modified with Pyrene at the 2'-Position**
Reiko Iwase,^{1,*} Miki Hayakawa,¹ Gaku Nakajima,¹ Miki Ando,¹ Misaki Hashimoto,¹ Kenji Ueda,¹ Hideuki Takahashi¹
¹Department of Life & Health Sciences, Faculty of Life & Environmental Sciences, Teikyo University of Science
- 2P-66 Evaluation of the effect of G4-forming sequences in genomic RNA of SARS-CoV-2 virus on its translation**
Hiroyuki Endo,¹ Kaori Tsukakoshi,² Junya Kitamura,² Masayuki Tera,² Kazuo Nagasawa,² Akira Shiraishi,³ Kazunori Ikebukuro^{2,*}
¹Department of Management of Technology, Graduate School of Engineering, Tokyo University of Agriculture and Technology, ²Department of Biotechnology and Life Science, Graduate School of Engineering, Tokyo University of Agriculture and Technology, ³Bioorganic Research Institute, Suntory Foundation for Life Sciences

- 2P-67 Characterization of archaeal Endonuclease V**
Michihi Hidaka,¹ Miyako Shiraishi,^{1*} Shigenori Iwai^{1*}
¹Graduate School of Engineering Science, Osaka University
- 2P-68 Cell-based screening of chemical libraries for small molecules that target SARS-CoV-2 frameshifting signal**
Risa Anami, Asako Murata, Kazuhiko Nakatani*
¹Department of Regulatory Bioorganic Chemistry, SANKEN (The Institute of Scientific and Industrial Research), Osaka University
- 2P-69 Improved Spinach aptamer with triplex for in vivo pH monitoring**
Saki Tamura,¹ Kinuko Ueno,² Kaori Tsukakoshi,² Kazunori Ikebukuro^{2*}
¹Department of management of technology, Graduate School of Engineering, Tokyo University of Agriculture and Technology, ²Department of Biotechnology and Life Science, Graduate School of Engineering, Tokyo University of Agriculture and Technology
- 2P-70 Design of bright yellow fluorogenic probes based on benzo[c,d]indole-containing cyanine dyes for RNA imaging in living cells**
Kei Higuchi,¹ Yusuke Sato,¹ Seiichi Nishizawa^{1,*}
¹Department of Chemistry, Graduate School of Science, Tohoku University
- 2P-71 Computer-aided classification of small molecules targeting CAG-repeat DNA**
Qingwen Chen,¹ Asako Murata,¹ Takeshi Yamada,¹ Ayako Sugai,¹ Yasuyuki Matsushita,² Kazuhiko Nakatani^{1,*}
¹SANKEN, Osaka University, ²Graduate School of Information Science and Technology, Osaka University
- 2P-72 Effect of Guanine-guanine Mismatch Binding Ligand on Repair Enzymes' Reactions *In Vitro***
Anisa Ul'Husna,¹ Asako Murata,¹ Kazuhiko Nakatani^{1,*}
¹Department of Regulatory Bioorganic Chemistry, SANKEN (The Institute of Scientific and Industrial Research), Osaka University
- 2P-73 Development of Exploration Method and Informatics analysis for small molecule-RNA pairs**
Yusuke Takashima,¹ Asako Murata,¹ Kei Iida,² Masatoshi Hagiwara³ and Kazuhiko Nakatani^{1,*}
¹Department of Regulatory Bioorganic Chemistry, SANKEN (The Institute of Scientific and Industrial Research), Osaka University, ²Medical Research Support Center, Kyoto University Graduate School of Medicine, ³Department of Anatomy and Developmental Biology, Kyoto University Graduate School of Medicine
- 2P-74 Modulation of cytosine deamination catalyzed by Deoxycytidine Deaminase APOBEC by binding of small molecule to DNA**
Luyan Zhang¹, Asako Murata¹, Kazuhiko Nakatani^{1,*}
¹Department of Regulatory Bioorganic Chemistry, SANKEN (The Institute of Scientific and Industrial Research), Osaka University
- 2P-75 Histidine-DNA Hybrid Catalysts as Laccase-mimicking DNazymes**
Ji Hye Yum,¹ Hiroshi Sugiyama,^{1,2,*} Soyoung Park^{3,*}
¹Department of Chemistry, Graduate School of Science, Kyoto University, ²Institute for Integrated Cell-Material Sciences (WPI-iCeMS), Kyoto University, ³Department of Genome Informatics, Immunology Frontier Research Center (iFRec), Osaka University

2P-76 Expansion of polygonal-shaped 2D ribozyme nanostructures to their double-decker 3D forms through rationally introducing a pillar kissing-loop motif

Md. Dobirul Islam¹, Kai Yu², Kumi Hidaka³, Hiroshi Sugiyama^{3,4}, Masayuki Endo^{4,5}, Shigeyoshi Matsumura^{1,2}, Yoshiya Ikawa^{1,2*}

¹Graduate School of Innovative Life Science, ²Graduate School of Science and Engineering, University of Toyama, ³Graduate School of Science, ⁴Institute for Integrated Cell-Material Sciences, Kyoto University, ⁵Organization for Research & Development of Innovative Science & Technology, Kansai University

2P-77 Computational ligand design for DNA/RNA bulge recognition by a combination of multi-level layered elongation method and machine learning

Yuuichi Orimoto,¹ Keisuke Hisama,² Kazuhiko Nakatani,³ Yuriko Aoki^{1,*}

¹Department of Material Sciences, Faculty of Engineering Sciences, Kyushu University, ²Department of Interdisciplinary Engineering Sciences, Chemistry and Materials Science, Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, ³Department of Regulatory Bioorganic Chemistry, The Institute of Scientific and Industrial Research

2P-78 Novel structures of non-natural nucleic acid duplexes

Akira Ono,^{1*} Chinatsu Yazawa,¹ Takahiro Atsugi¹, Jiro Kondo²

¹GraduatDepartment of Materials & Life Chemistry, Faculty of Engineering, Kanagawa University, ²Department of Materials and Life Sciences, Faculty of Science and Technology, Sophia University

2P-79 Development of an AND-gate DNAzyme that responds to Cu(II) and Ag(I) ions as inputs

Yusuke Takezawa,¹ Takahiro Nakama,¹ Mitsuhiko Shionoya^{1,*}

¹Department of Chemistry, Graduate School of Science, The University of Tokyo

2P-80 Directed evolution of orthogonal RNA–RBP pairs through library-vs-library *in vitro* selection

Keisuke Fukunaga,¹ Yohei Yokobayashi^{1,*}

¹Nucleic Acid Chemistry and Engineering Unit, Okinawa Institute of Science and Technology Graduate University (OIST)

2P-81 Effect of multimeric G4 forming aptamer on luminol chemiluminescence catalyzed by myoglobin

Hyuga Nakamura,¹ Kaori Tsukakoshi,¹ Kazunori Ikebukuro^{1*}

¹Department of Biotechnology and Life Science, Graduate School of Engineering, Tokyo University of Agriculture and Technology

2P-82 Changes in the atomic-level behavior of G-quadruplex under high pressure conditions

Tatsuya Ohyama,¹ Hisae Tateishi-Karimata,¹ Shuntaro Takahashi,¹ Shigenori Tanaka,² Naoki Sugimoto^{1,3,*}

¹Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, ²Graduate School of System Informatics, Kobe University, ³Graduate School of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University

2P-83 Probing DNA Topology and DNA-Protein Interactions by Using Topologically-Interlocked DNA Structures

Arivazhagan Rajendran,¹ Seojeong Park,² Eiji Nakata,¹ Youngjoo Kwon,² Takashi Morii^{1,*}

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- 2P-84 Fluorescence sensing of influenza A virus RNA promoter by thiazole orange base surrogate-carrying PNA conjugated with small molecule**
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- 2P-85 Identification of small molecules that can bind to the SARS-CoV-2 frameshifting signal by SPR-based screening of chemical libraries**
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- 2P-86 Synthesis of quinoxaline-2,3-dione derivatives and binding properties to DNA and RNA with tandem C-C mismatches**
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- 2P-87 An RNA internal loop of C, U and A/CC motifs specific fluorescence probe ANP77**
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- 2P-88 A dual fluorescence turn-on probe for simultaneous imaging of double-stranded DNA and G4 DNA**
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- 2P-89 Molecular Recognition Mechanism of the Binding between Quadruplex Nucleic Acids and Budding Yeast Quadruplex Nucleic Acid Binding Protein**
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- 2P-90 Thermodynamic Properties of the Specific Binding between Metal Ion and Mismatched Base Pair under Molecular Crowding Condition**
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- 2P-91 Thermodynamic Properties of the Specific Binding between Metal Ion and Mismatched Base Pair in a Duplex Containing 2'-O, 4'-C Methylene Bridged Nucleic Acid**
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- 2P-92 Tropylium Derivatives as New Entrants that Sense Quadruplex Structures**
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2P-93 Inhibition of GLI-mediated Transcription by Cyclic Pyrrole–Imidazole Polyamides in Glioblastoma

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2P-94 Comparative study of ribozyme sequences for RNA circularization

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2P-95 qPCR-based Screening Methods for Small Molecules that Modulate Dicer-mediated pre-miR-182/31/30d Processing

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2P-96 Detection of CpG methylation in G-quadruplex Forming Sequences

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2P-97 Proximity ligation assay combining aptamer with antibody for detection of amyloid-beta oligomers in brains

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2P-98 Simultaneous enhancement of hybridization chain reaction (HCR)-DNAzyme coupling reaction by cationic copolymers

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2P-99 Quantitative PCR Discriminating Single Point Mutation Using Chemically Modified Primers

Ryosuke Fujita¹, Yasuo Shiohama², Maika Sonokawa¹, Masaaki Hisano¹, Yojiro Kotake¹ and Masayuki Fujii^{1*}

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2P-100 Synthesis and purification of reduced DNA-silver hybrid nanowires

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2P-101 RNA FISH of 16S rRNA in *E. coli* using multiple probes containing ultrafast RNA photo-cross-linker

Zumila Halili¹, Nanami Watanabe¹, Shigetaka Nakamura¹, Kenzo Fujimoto^{1,*}

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- 2P-102 Development of highly sensitive genetic analysis method using signal amplification by dumbbell-shaped molecular beacons**
Tomohisa Moriguchi* Ayana Nagai, Noriko Takayama, Kazuo Shinozuka
Division of Molecular Science, Graduate School of Science and Technology, Gunma University
- 2P-103 Quantification of target nucleotides using ratiometric SERS assays**
Kenta Sasaki, Ryo Ota, Tomonori Waku, Akio Kobori*
Graduate school of science and technology, Kyoto Institute of Technology
- 2P-104 Nanopore decoding with DNA computing-induced structural change for microRNA pattern recognition**
Sotaro Takiguchi and Ryuji Kawano*
Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology
- 2P-105 Effect of multivalent fatty acid conjugation on the activity and membrane permeability of antisense oligonucleotides**
Yuya Tanaka,¹ Yurika Tanioku,² Kotomi Aso,³ Taisuke Nakayama,³ Haruhiko Kamada,³ Takao Yamaguchi,^{1,*} Satoshi Obika^{1,3,*}
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- 2P-106 Synthesis and evaluation of antisense oligonucleotides multiply conjugated with hexose-type sugar monomers**
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- 2P-107 Synthesis and *in vivo* evaluation of 9-aminoethoxy-1,3-diaza-2-oxophenoxazine conjugated antisense oligonucleotides**
Ryohei Yamaji,¹ Yuki Kishimoto,¹ Akane Fujii,¹ Tomoki Matsumura,¹ Osamu Nakagawa,^{1,3} Taisuke Nakayama,² Haruhiko Kamada,² Satoshi Obika^{1,2,*}
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- 2P-108 Development of novel circulating microRNA-targeting antibody-oligonucleotide conjugates for lung cancer therapy**
Shota Oyama,¹ Kuon Kanazawa,¹ Aiko Yoshida,² Yu Mikame,¹ Tsuyoshi Yamamoto,¹ Yusuke Ohba,² Asako Yamayoshi^{1,*}
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- 2P-109 Immunostimulatory Activity of DNA Dendrimers**
Yusuke Kawamoto,^{1,*} Wen Liu,¹ Ji Hye Yum,² Soyoung Park,² Hiroshi Sugiyama,^{2,3} Yuki Takahashi,¹ Yoshinobu Takakura^{1,*}
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- 2P-110 Effective Nose-to-Brain Co-delivery of Antisense Oligonucleotide and RNase H via Polyion Complex Vesicle for Improving Treatment of Neurodevelopmental Disorders**
Beob Soo Kim,^{1,*} Kanjiro Miyata^{1,*}
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- 2P-111 Characterization of a bifunctional aptamers and improvement of drug effects**
Hiroto Fujita,¹ Yuka Kataoka,² Masayasu Kuwahara^{1,*}
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- 2P-112 Non Invasive Regulation of Cellular Morphology Using a Photoswitchable Mechanical DNA Polymer**
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- 2P-113 Preparation and structure analysis of oligonucleotide-metal ion complexes**
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- 2P-114 Synthesis and metal ion bindings of oligonucleotides having functional groups on pyrimidine bases**
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- 2P-115 Regulation of thrombin activity by a linear hexaoxazole G-quadruplex ligand controlling thrombin-binding aptamer topologies**
Shogo Sasaki,¹ Yue Ma,¹ Kazunori Ikebukuro,¹ Masayuki Tera,¹ Kazuo Nagasawa^{1,*}
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- 2P-116 Development of a Cyclic Pyrrole–Imidazole Polyamide that Strongly and Specifically Binds to CAG/CTG Repeats**
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- 2P-117 Evaluation of Linear Pyrrole–Imidazole Polyamides with Various N-Terminal Modifications**
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