

The 43rd  
International Symposium on  
Nucleic Acids Chemistry 2016

# ISNAC 2016

第43回 国際核酸化学シンポジウム

Program & Abstracts

Period

**September 27 (Tue)–29 (Thu), 2016**

2016年9月27日(火)～29日(木)

Venue

**100th Anniversary Hall,  
Kumamoto University**

熊本大学工学部百周年記念館 〒860-8555 熊本市中央区黒髪2丁目39-1

Organizer

**Prof. Toshihiro Ihara**  
Kumamoto University

井原 敏博 (熊本大学大学院自然科学研究科)

# ISNAC 2016

The 43<sup>rd</sup> International Symposium on  
Nucleic Acids Chemistry 2016

## 第43回 国際核酸化学シンポジウム

Program & Abstracts

Period

**September 27 (Tue)–29 (Thr), 2016**

2016年9月27日(火)～29日(木)

Venue

**100th Anniversary Hall,  
Kumamoto University**

〒860-8555 熊本市中央区黒髪2丁目39-1

Organizer

**Prof. Toshihiro Ihara** Kumamoto University

井原 敏博 (熊本大学大学院自然科学研究科)

Sponsored by

The Organizing Committee of International Symposium on Nucleic Acids Chemistry  
Kumamoto University

Cosponsored by

The Uehara Memorial Foundation

The Naito Foundation

Suntory Foundation for Life Sciences

Middle Molecular Strategy: Creation of higher bio-functional molecules by integrated synthesis, MEXT

Program for Advancing Strategic International Networks to Accelerate the Circulation of Talented  
Researchers, JSPS

Kumamoto University Group for Research B

Supported by

The Chemical Society of Japan

The Pharmaceutical Society of Japan

The Japan Society of Analytical Chemistry

The Society of Polymer Science, Japan

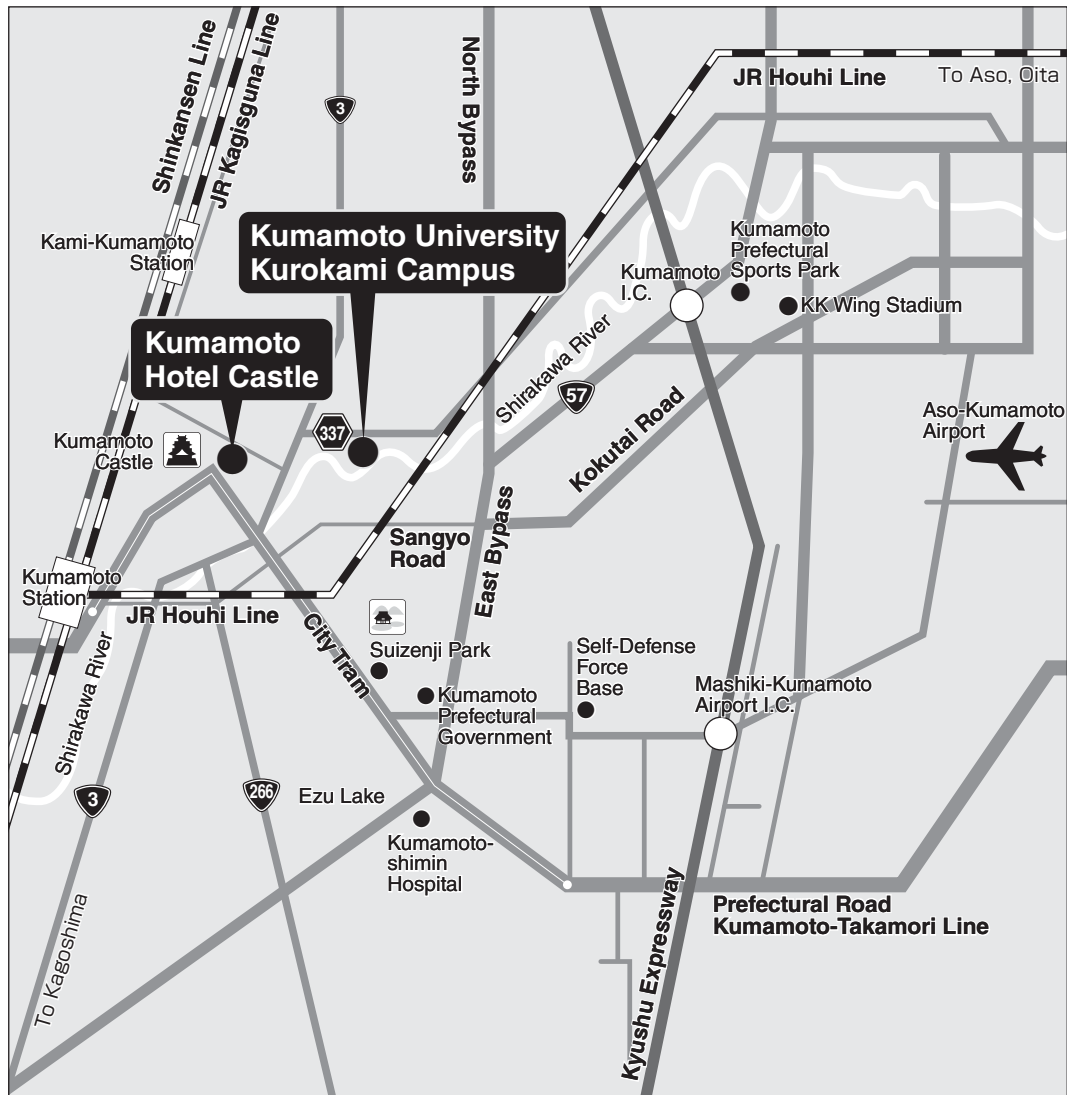
## **Executive Committee**

Toshihiro IHARA (Kumamoto University)  
Fumi NAGATSUGI (Tohoku University)  
Takehiko WADA (Tohoku University)  
Shinsuke SANDO (The University of Tokyo)  
Atsushi MARUYAMA (Tokyo Institute of Technology)  
Mitsuo SEKINE (Tokyo Institute of Technology)  
Hidetaka TORIGOE (Tokyo University of Science)  
Takeshi WADA (Tokyo University of Science)  
Hiroyuki ASANUMA (Nagoya University)  
Naoki SUGIMOTO (Konan University)  
Kazushige YAMANA (University of Hyogo)  
Shigeori TAKENAKA (Kyushu Institute of Technology)  
Shigeki SASAKI (Kyushu University)  
Masayuki FUJII (Kindai University)  
Shunji IZUTA (Kumamoto University)

## **Organizing Committee**

Morio IKEHARA (Osaka University)  
Eiko OTSUKA (Hokkaido University)  
Hikoya HAYATSU (Okayama University)  
Yoshihiro HAYAKAWA (Aichi Institute of Technology)  
Naoki SUGIMOTO (Konan University)  
Mitsuo SEKINE (Tokyo Institute of Technology)  
Akira MATSUDA (Hokkaido University)  
Hiromichi TANAKA (Showa University)  
Shigeki SASAKI (Kyushu University)  
Makoto KOMIYAMA (University of Tsukuba)  
Yukio KITADE (Gifu University)  
Takeshi IMANISHI (BNA Inc.)

## Around the Venue



### From JR Kumamoto Station

- **Bus:** Get on the bus (Sanko or Dentetsu) from No. 1, get off at Kumamoto Daigaku mae, 30 min
- **Tram & Bus:** Get off the city tram at Suidocho, transfer to the bus (Sanko or Dentetsu) and get off at Kumamoto Daigaku mae, 30 min

### From Kumamoto Bus Terminal (Kotsu-center)

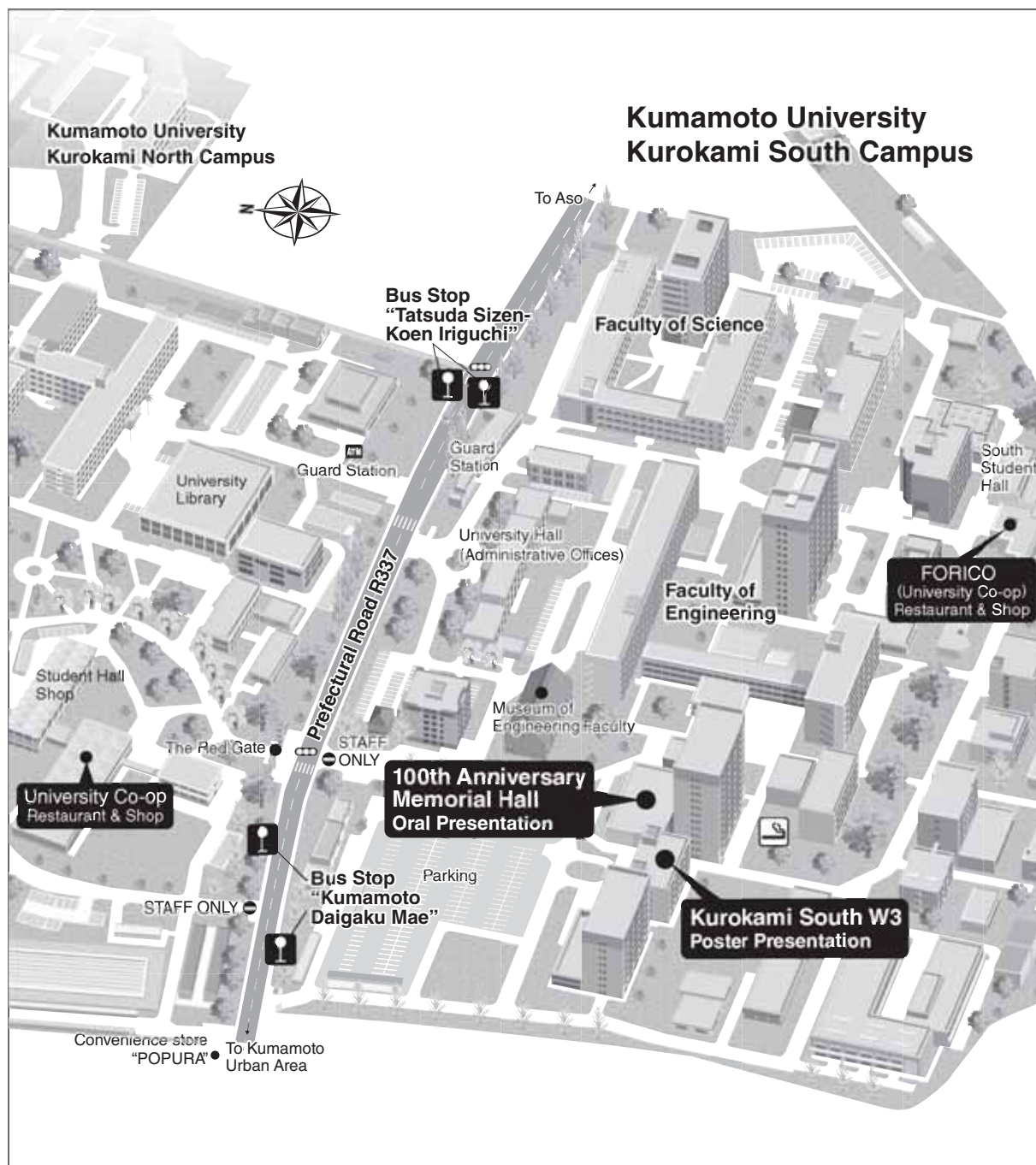
- **Bus:** Get on the bus (Sanko or Dentetsu) from gate No. 16, get off at Kumamoto Daigaku mae, 20 min

### From Kumamoto Airport

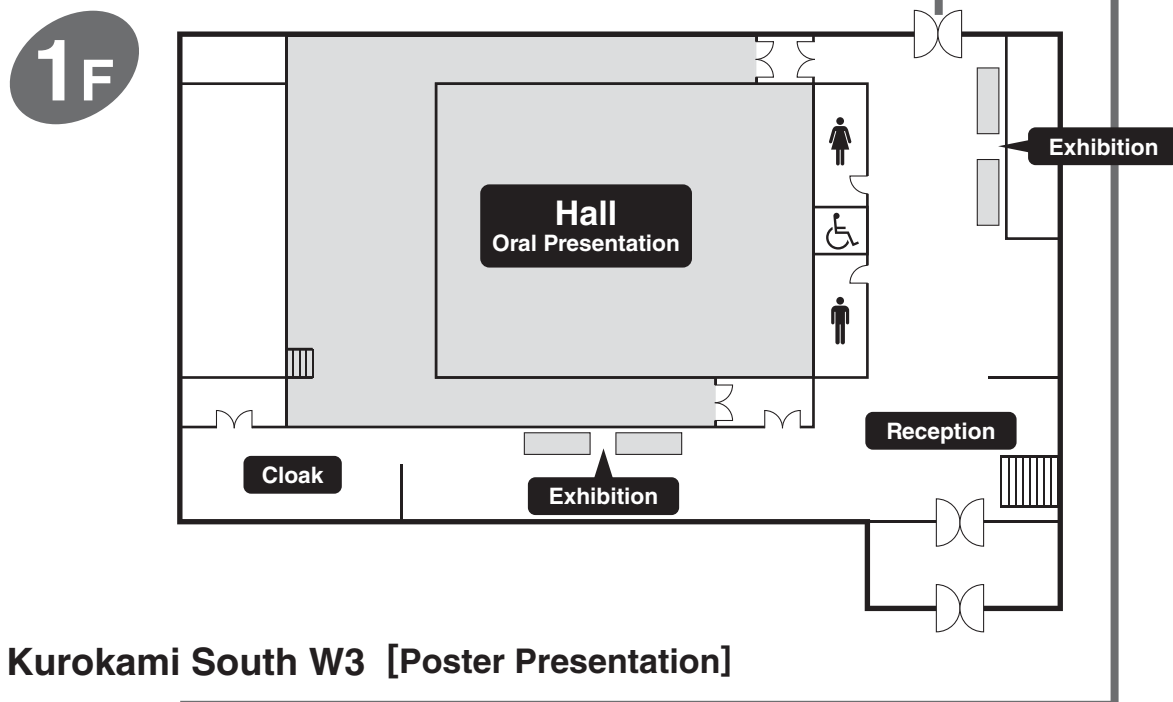
- **Bus:** Get off the limousine at Torichosuji, walk 3 min, get on the bus (Sanko or Dentetsu) at Suidocho and get off at Kumamoto Daigaku mae, 70 min

### By Car

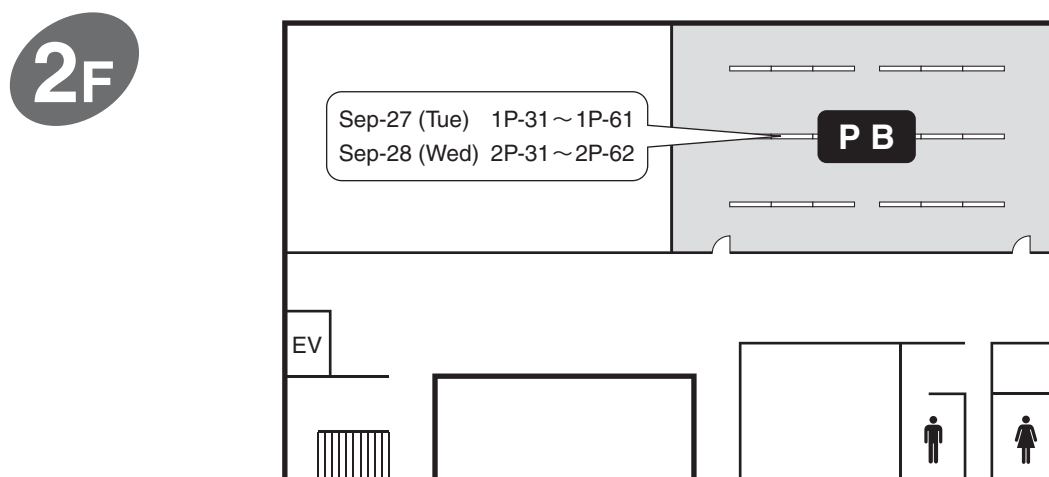
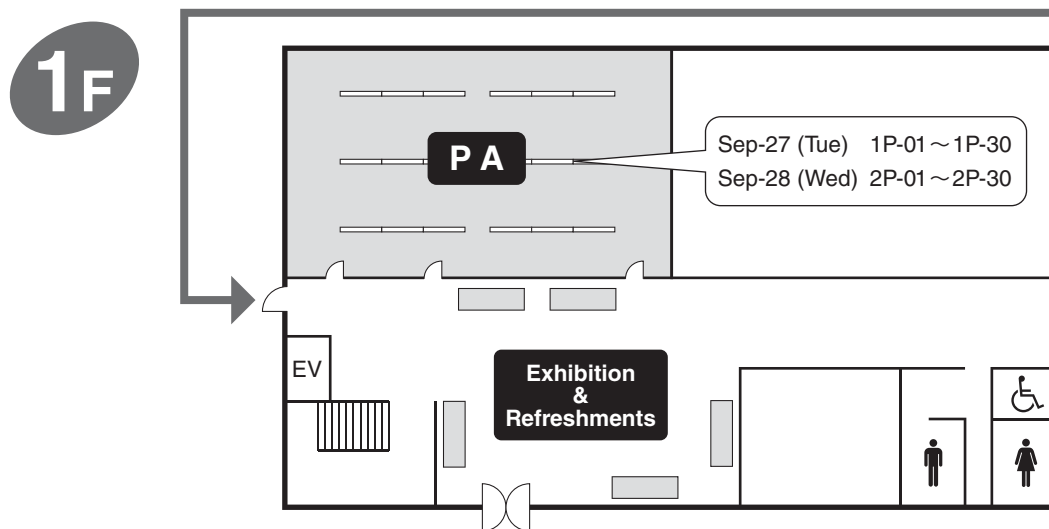
- **From Kumamoto I.C.:** 20 min
- **From Mashiki-Kumamoto I.C.:** 30 min



## 100th Anniversary Hall [Oral Presentation]



## Kurokami South W3 [Poster Presentation]



# Program

## Day 1: September 27 (Tue)

9:00-9:15	<b>Oral Presentations</b> Chair: Kazushige Yamana Univ. of Hyogo	<b>1O-01</b> Pinpoint modification of 6-NH <sub>2</sub> of the adenine in RNA by the functionality transfer oligonucleotides and its impact on reverse-transcription and translation <u>Ikuya Oshiro</u> , Daichi Jitsuzaki, Takuya Matsumoto, Yosuke Taniguchi, Shigeki Sasaki Graduate school of pharmaceutical sciences, Kyushu university
9:15-9:30		<b>1O-02</b> Novel function of tRNA: A regulator of oncogenes expression through switching hairpin-G-quadruplex equilibrium <u>Ambadas B Rode</u> <sup>1)</sup> , Tamaki Endoh <sup>1)</sup> , Naoki Sugimoto <sup>1)2)</sup> 1) Frontier Institute for Biomolecular Engineering Research(FIBER), Konan University, Kobe, Japan, 2) Graduate School of Frontiers of Innovative Research in Science and Technology(FIRST), Konan University, Kobe, Japan
9:30-9:45		<b>1O-03</b> In vitro selection of pre-miR-29a loop mutant against the cyclic mismatch binding ligand(CMBL) <u>Sanjukta Mukherjee</u> , Asako Murata, Kazuhiko Nakatani Department of Regulatory Bioorganic Chemistry, ISIR, Osaka University
9:45-10:00		<b>1O-04</b> An anti-parallel RNA G-quadruplex induced by specific incorporation of 8-bromoguanosine <u>Chao-da Xiao</u> , Takumi Ishizuka, Yan Xu Division of Chemistry, Department of Medical Sciences, Faculty of Medicine, University of Miyazaki
10:00-10:15	<b>Break</b>	
10:15-10:55	<b>Invited Lecture</b> Chair: Mitsuo Sekine Tokyo Inst. of Tech.	<b>11L-01</b> Oligonucleotide Synthesis Interfaced with Molecular Biology <u>Marvin H. Caruthers</u> Department of Chemistry and Biochemistry, University of Colorado
10:55-11:10	<b>Oral Presentations</b> Chair: Yuichi Ohya Kansai Univ.	<b>1O-05</b> Evaluation of orthogonal modular adaptors for assembling proteins on DNA scaffold <u>Thang Minh Nguyen</u> , Eiji Nakata, Masayuki Saimura, Takashi Morii Institute of Advanced Energy, Kyoto University
11:10-11:25		<b>1O-06</b> Enhanced strand invasion into double-stranded DNA by PNA-NLS peptide conjugates <u>Yuichiro Aiba</u> <sup>1)</sup> , Gerardo Urbina <sup>1)</sup> , Yoshihito Watanabe <sup>2)</sup> 1) Department of Chemistry, Graduate School of Science, Nagoya University, 2) Research Center for Materials Science, Nagoya University
11:25-11:40	<b>Break</b>	
11:40-12:20	<b>Invited Lecture</b> Chair: Shigeori Takenaka Kyushu Inst. of Tech.	<b>11L-02</b> Plasmonics Enhanced Spectroscopic and Electrochemical Bioanalysis <u>Xing-Hua Xia</u> State Key Lab of Analytical Chemistry for Life Science, School of Chemistry and Chemical Engineering, Nanjing University

12:20-12:35	<b>Oral Presentations</b> Chair: Shinsuke Sando Univ. of Tokyo	<b>1O-07</b> Structural optimization of pseudorotaxane-forming oligo DNA targeting on nucleic acids <u>Kazumitsu Onizuka</u> , Takuya Miyashita, Fumi Nagatsugi Institute of Multidisciplinary Research for Advanced Materials, Tohoku University
12:35-12:50		<b>1O-08</b> Non-coding RNA/DNA recognition by TLS/FUS that causes repression of <i>cyclin D1</i> transcription and telomere elongation <u>Keiko Kondo</u> <sup>1)</sup> , Tsukasa Mashima <sup>1)2)</sup> , Takanori Oyoshi <sup>3)</sup> , Ryoma Yoneda <sup>4)</sup> , Riki Kurokawa <sup>4)</sup> , Takashi Nagata <sup>1)2)</sup> , Masato Katahira <sup>1)2)</sup> 1) Institute of Advanced Energy, Kyoto University, 2) Graduate School of Energy Science, Kyoto University, 3) Department of Chemistry, Shizuoka University, 4) Research Center of Genomic Medicine, Saitama Medical University
12:50-13:50	<b>Lunch Break</b>	
13:50-15:20	<b>Poster Presentations (1P-n)</b>	
15:20-15:35	<b>Oral Presentations</b> Chair: Takeshi Wada Tokyo Univ. of Sci.	<b>1O-09</b> Base-resolution analysis of 5-hydroxymethylcytosine by peroxotungstate-mediated oxidative C-to-T conversion <u>Gosuke Hayashi</u> <sup>1)</sup> , Kenta Koyama <sup>1)</sup> , Akimitsu Okamoto <sup>1)2)</sup> 1) Department of Chemistry and Biotechnology, The University of Tokyo, 2) RCAST, The University of Tokyo
15:35-15:50		<b>1O-10</b> Deformability analysis of chemically modified RNA and its applicability for estimation of RNA duplex stability <u>Yoshiaki Masaki</u> , Ryuta Miyasaka, Keishi Yamamoto, Keita Yoshida, Akihiro Ohkubo, Mitsuo Sekine, Kohji Seio Department of Life Science and Technology, Tokyo Institute of Technology
15:50-16:30	<b>Invited Lecture</b> Chair: Shigeki Sasaki Kyushu Univ.	<b>1IL-03</b> A Novel Polysaccharide Carrier for Immuno-Controlling Therapeutic Oligonucleotides to Antigen Presenting Cells <u>Kazuo Sakurai</u> , Shinichi Mochizuki Department of Chemistry and Biochemistry, University of Kitakyushu
16:30-16:45	<b>Break</b>	
16:45-17:25	<b>Invited Lecture</b> Chair: Toshihiro Ihara Kumamoto Univ.	<b>1IL-04</b> The Molecular Foundation of Cancer: A Chemical Biology Approach <u>Weihong Tan</u> <sup>1)2)</sup> 1) Molecular Science and Biomedicine Laboratory, State Key Laboratory of Chemo/Biosensing and Chemometrics, College of Chemistry and Chemical Engineering, College of Biology, and Collaborative Innovation Center for Molecular Engineering and Theranostics, Hunan University, 2) Department of Chemistry and Dept. of Physiology Functional Genomics, Health Cancer Center and Center for Research at the Interface of Bio/nano, H. Lee Moffitt Cancer Center & Research Institute, UF Genetics Institute and McKnight Brain Institute, University of Florida

17:25-17:40	<b>Oral Presentations</b> Chair: <b>Junji Kawakami</b> Konan Univ.	<b>10-11</b> Highly sensitive electrochemical microRNAs sensor based on triple signal amplification strategy <u>Qingming Shen</u> <sup>1)</sup> , Mengxing Fan <sup>1)</sup> , Yin Yang <sup>2)</sup> , Hui Zhang <sup>2)</sup> 1) Institute of Advanced Materials, Nanjing University of Posts & Telecommunications, 2) College of Chemistry and Materials Science, Nanjing Normal University
17:40-17:55		<b>10-12</b> Evaluation of exon 23 skipping in <i>Dmd</i> gene transcript using LNA-modified antisense oligonucleotides <i>in vitro</i> and <i>in vivo</i> <u>Rakesh Naduvile Veedu</u> <sup>1)</sup> , Abbie Adams <sup>1)</sup> , Susan Fletcher <sup>1)</sup> , Tri Le Bao <sup>1)</sup> , Arun Shastry <sup>1)</sup> , Jesper Wengel <sup>2)</sup> , Steve D Wilton <sup>1)</sup> 1) Centre for Comparative Genomics, Murdoch University & Western Australian Neuroscience Research Institute, 2) Nucleic Acid Center, University of Southern Denmark, Odense M, 5230, Denmark

## Day 2: September 28 (Wed)

9:00-9:15	<b>Oral Presentations</b> Chair: Noriaki Minakawa Tokushima Univ.	<b>20-01</b> EFdA: A Supremely Excellent Anti-HIV Active Nucleoside-Design, Synthesis and Biological Activity- <u>Hiroshi Ohrui</u> Yokohama University of Pharmacy
9:15-9:30		<b>20-02</b> Development of pro-drug type oligonucleotide medicines which are deprotectable in cells <u>Akira Ono</u> , Yuki Hiyoshi, Kazuhiko Kondo, Koich Iketani, Kanami Shimamura, Hisao Saneyoshi Department of material & life chemistry, Faculty of engineering, Kanagawa University
9:30-9:45		<b>20-03</b> Creation of Ischemia-Specific Oligonucleotide Therapeutics System with Intracellular Environmental Condition - Responsive Peptide Ribonucleic Acids (PRNAs) <u>Takehiko Wada</u> <sup>1)</sup> , Ryohei Uematsu <sup>1)</sup> , Mitsuo Asai <sup>1)</sup> , Masahito Inagaki <sup>1)</sup> , Hiroka Sugai <sup>1)</sup> , Yasuyuki Araki <sup>1)</sup> , Seiji Sakamoto <sup>1)</sup> , Satoru Ishibashi <sup>2)</sup> , Takanori Yokota <sup>2)</sup> 1) IMRAM, Tohoku University, 2) Department of Neurology and Neurological Science, Tokyo Medical Dental University
9:45-10:00		<b>20-04</b> Advances in high-throughput ribozyme assay based on deep sequencing <u>Yohei Yokobayashi</u> , Shungo Kobori Nucleic Acid Chemistry and Engineering Unit, Okinawa Institute of Science and Technology
10:00-10:15	<b>Break</b>	
10:15-10:55	<b>Invited Lecture</b> Chair: Kazuo Shinozuka Gunma Univ.	<b>2IL-01</b> TINA-DNA Assemblies in Biomedical and Fluorescence Applications <u>Vyacheslav V. Filichev</u> Institute of Fundamental Sciences, Massey University, Palmerston North, New Zealand
10:55-11:10	<b>Oral Presentations</b> Chair: Hirohide Saito Kyoto Univ.	<b>20-05</b> Development of an AND-gate ribozyme that responds to metabolite and RNA inputs <u>Shigeyoshi Matsumura</u> , Takuto Naito, Yoshiya Ikawa Graduate School of Science and Engineering, University of Toyama
11:10-11:25		<b>20-06</b> Enhancement of DNzyme and MNzyme activity with cationic copolymers <u>Atsushi Maruyama</u> , Ken Saito, Tomoya Oyanagi, Jueyuan Gao, Naohiko Shimada Department of Life Science and Technology, Tokyo Institute of Technology
11:25-11:40	<b>Break</b>	
11:40-12:20	<b>Invited Lecture</b> Chair: Naoki Sugimoto Konan Univ.	<b>2IL-02</b> Structure and Function of DNA G-quadruplexes and Its Potential as Anticancer Drug Target <u>Danzhou Yang</u> <sup>1)2)</sup> 1) Medicinal Chemistry and Molecular Pharmacology, College of Pharmacy, Purdue University, 2) Purdue Center for Cancer Research

12:20-12:35	<b>Oral Presentations</b> Chair: Hiroshi Abe Nagoya Univ.	<b>3O-07</b> Is it possible to form stable Z-DNA structure under physiological conditions ? <u>Xingguo Liang</u> <sup>1)2)</sup> , Qi Li <sup>1)</sup> , Yiqiao Fan <sup>1)</sup> , Ran An <sup>1)2)</sup> , Jing Li <sup>1)</sup> , Ping Dong <sup>1)</sup> 1) College of Food Science and Engineerig, Ocean University of China, 2) Graduate School of Engineering, Nagoya University
12:35-12:50		<b>3O-08</b> Crystal structure of silver-DNA hybrid nanowire <u>Jiro Kondo</u> <sup>1)2)</sup> , Yoshinari Tada <sup>2)</sup> , Takenori Dairaku <sup>3)</sup> , Hisao Saneyoshi <sup>4)</sup> , Yoshiyuki Tanaka <sup>3) 5)</sup> , Akira Ono <sup>4)</sup> 1) Department of Materials and Life Sciences, 2) Graduate School of Science and Technology, Sophia University, 3) Graduate School of Pharmaceutical Sciences, Tohoku University, 4) Department of Material and Life Chemistry, Kanagawa University, 5) Faculty of Pharmaceutical Sciences, Tokushima Bunri University
12:50-13:50	<b>Lunch Break</b>	
13:50-14:30	<b>Invited Lecture</b> Chair: Hiroyuki Asanuma Nagoya Univ.	<b>3IL-03</b> On the Chemistry and Biology of Tricyclo-DNA derivatives Alena Istrate <sup>1)</sup> , Michal Medvecky <sup>1)</sup> , Aurélie Goyenvalle <sup>2)</sup> , Luis Garcia <sup>2)</sup> , <u>Christian J. Leumann</u> <sup>1)</sup> 1) Department of Chemistry and Biochemistry, University of Bern, 2) Université de Versailles St-Quentin
14:30-14:45	<b>Oral Presentations</b> Chair: Kohji Seio Tokyo Inst. of Tech.	<b>3O-09</b> Synthesis of diazirine-containing RNA photocrosslinking probes for capturing miRNA targets <u>Kosuke Nakamoto</u> <sup>1)</sup> , Yukihiro Akao <sup>3)</sup> , Yoshihito Ueno <sup>1)2)</sup> 1) The United Graduate School of Agricultural Science, Gifu University, 2) Graduate School of Applied Biological Sciences and Faculty of Applied Biological Sciences, Gifu University, 3) The United Graduate School of Drug Discovery and Medical Information Sciences, Gifu University
14:45-15:00		<b>3O-10</b> Activity of the assembled enzyme on DNA scaffold <u>Huyen Thi Thu Dinh</u> , Eiji Nakata, Tien Anh Ngo, Takashi Morii Institute of Advanced Energy, Kyoto University
15:00-15:15		<b>3O-11</b> Synthesis and Properties of <i>P</i> -stereodefined PO/PB Chimeric Oligoribonucleotides <u>Yohei Nukaga</u> <sup>1)</sup> , Natsuhisa Oka <sup>2)</sup> , Takeshi Wada <sup>1)</sup> 1) Department of Medicinal and Life Sciences, Faculty of Pharmaceutical Sciences, Tokyo University of Science, 2) Department of Chemistry and Biomolecular Science, Faculty of Engineering, Gifu University
15:15-15:30		<b>3O-12</b> Oligodeoxynucleotides that modify lysines to produce fluorescent lactam for DNA-interacting protein labeling <u>Mariko Aso</u> , Chiemi Gatanaga, Bo Yang, Kazuteru Usui, Chiyoe Ota, Hiroshi Suemune Graduate School of Pharmaceutical Sciences, Kyushu University
15:30-15:40	<b>Closing Remarks</b>	

# List of Poster Presentations

Poster Presentations	1P-n:	September 27 (Tue)	13:50-15:20
	2P-n:	September 28 (Wed)	13:50-15:20
<b>1P-01</b>	Chemical and Enzymatic Syntheses of 4'-Seleno Oligonucleotides <u>Noriko Tarashima</u> , Koya Hayashi, Tatsuya Sumitomo, Noriaki Minakawa Graduate School of Pharmaceutical Science, Tokushima University		
<b>1P-02</b>	Creation of the ischemia-specific oligonucleotide therapeutics system with intracellular environment-responsive Peptide Ribonucleic Acids (PRNAs) : <i>Development of half-gamer type chimeric PRNA-DNA-LNA derivatives</i> <u>Masahito Inagaki</u> <sup>1)2)</sup> , Ryohei Uematsu <sup>1)</sup> , Daisuke Unabara <sup>1)</sup> , Yasuyuki Araki <sup>1)</sup> , Seiji Nakamoto <sup>1)</sup> , Satoru Ishibashi <sup>2)</sup> , Takanori Yokota <sup>2)</sup> , Takehiko Wada <sup>1)</sup> 1) Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University, 2) Department of Neurology and Neurological Science, Tokyo Medical Dental University		
<b>1P-03</b>	Synthesis of inosine 6-phosphate derivatives via phosphitylation of carbonyl oxygen <u>Natsuhisa Oka</u> , Yuta Itakura, Yasuhiro Morita, Kaori Ando Department of Chemistry and Biomolecular Science, Faculty of Engineering, Gifu University		
<b>1P-04</b>	Synthesis and Biophysical Properties of 5'-Thio Derivative of 2', 4'- BNA/LNA <u>Md Ariful Islam</u> <sup>1)</sup> , Aki Fujisaka <sup>1)2)</sup> , Kosuke Ito <sup>1)</sup> , Reiko Waki <sup>1)</sup> , Satoshi Obika <sup>1)</sup> 1) Graduate School of Pharmaceutical Sciences, Osaka University, 2) Faculty of Pharmacy, Osaka Ohtani University, Nishikiori-Kita 3-11-1, Tondabayashi, Osaka 584-8540, Japan		
<b>1P-05</b>	Oligonucleotides Incorporating the 4-Vinylpyrimidine Derivatives to Investigate the Cross-link Formation with mRNA <u>Kenji Kikuta</u> , Yosuke Taniguchi, Shigeki Sasaki Graduate School of Pharmaceutical Sciences, Kyushu University		
<b>1P-06</b>	Antigene effect of triplex forming oligonucleotide incorporating the new $\Psi$ -dC derivative for the selective recognition of CG base pairs in the anti-parallel triplex DNA <u>Lei Wang</u> , Hidenori Okamura, Yosuke Taniguchi, Shigeki Sasaki Graduate School of Pharmaceutical Sciences, Kyushu University		
<b>1P-07</b>	Synthesis of the $N^2$ -substituted 2'-deoxyguanosine derivatives and the binding evaluation for the triplex DNA formation <u>Mei Miyazaki</u> , Yosuke Taniguchi, Nozomu Matsueda, Shigeki Sasaki Graduate School of Pharmaceutical Sciences, Kyushu University		
<b>1P-08</b>	Synthesis and properties of methyl modified guanidine bridged nucleic acid <u>Naohiro Horie</u> , Satoshi Obika Graduate School of Pharmaceutical Sciences, Osaka University		
<b>1P-09</b>	Chemical and enzymatic synthesis of photo-caged DNA containing of $N^1$ -nitrobenzyl-2'-deoxypseudouridine for UV dependent regulation of transcription <u>Leo Takeshita</u> , Kentaro Ohno, Yoshiaki Masaki, Mitsuo Sekine, Kohji Seio Department of Life Science, Tokyo Institute of Technology		

- 1P-10** NEW PROTOCOL FOR PIXYLATION AND INVENTION OF NEW PIXYLATING REAGENTS FOR PRIMARY ALCOHOL IN NUCLEOSIDES  
Shyamapada Banerjee<sup>1)</sup>, Srishylam Penjarla<sup>1)</sup>, Raji Reddy Akiti<sup>1)</sup>, Yogesh S Sanghvi<sup>2)</sup>  
 1) Research and Development, Sapala Organics Private Limited, 2) Rasayan Inc., USA
- 1P-11** Synthesis, Photophysical Properties, and Enzymatic Incorporation of an Emissive Thymidine Analogue  
Izumi Okamura<sup>1)</sup>, Soyoung Park<sup>1)</sup>, Hiroshi Sugiyama<sup>1)2)</sup>  
 1) Department of Chemistry, Graduate School of Science, Kyoto University, 2) Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University
- 1P-12** Design of the reactive nucleoside analogs and its incorporation into the oligonucleotides for the site-selective chemical modification of 2'-hydroxyl group of RNA  
Hayate Takasaki, Yrie Hadano, Yosuke Taniguchi, Shigeki Sasaki  
 Graduate School of Pharmaceutical Sciences, Kyushu University
- 1P-13** Synthesis and Enzymatic properties of C-nucleoside Triphosphate Containing Pyridazin-3-one as a uracil analog  
Takahito Tomori, Kento Nagaoka, Yuya Miyatake, Yoshiaki Masaki, Mitsuo Sekine, Kohji Seio  
 Department of Life Science and Technology, Tokyo Institute of Technology
- 1P-14** Investigation of stabilization and Z  $\alpha$  protein interaction of Z-DNA induced by 2'-O-methyl-8-methylguanosine as a Z-DNA stabilizer  
Thananjeyan Balasubramaniyam, Takumi Ishizuka, Yan Xu  
 Division of Chemistry, Department of Medical Sciences, Faculty of Medicine, University of Miyazaki
- 1P-15** Development of distance and orientation controlled FRET system using emissive dG-dC analogue pair  
Ji Hoon Han<sup>1)</sup>, Seigi Yamamoto<sup>2)</sup>, Soyoung Park<sup>1)</sup>, Hiroshi Sugiyama<sup>1)3)</sup>  
 1) Department of Chemistry, Graduate School of Science, Kyoto University, 2) Graduate School of Pharmaceutical Sciences, Tokushima University, 3) Institute for Integrated Cell Material Sciences (iCeMS), Kyoto University
- 1P-16** Delivery of antisense PNA-PEG conjugates modified with cell-penetrating signal and regulation of gene expression in cell  
Toshihiko Sakurai<sup>1)</sup>, Yusuke Hamashita<sup>1)</sup>, Takashi Okuno<sup>2)</sup>, Naoki Kise<sup>1)</sup>  
 1) The Graduate School of Engineering, Tottori University, 2) Deptment of Material and Biological Chemistry, Faculty of Science, Yamagata University
- 1P-17** Conformationally Restricted Guanosine Analogues Induce Topological Change in Human Telomeric DNA G-Quadruplexes  
Takumi Ishizuka, Yan Xu  
 Division of Chemistry, Department of Medical Sciences, Faculty of Medicine, University of Miyazaki
- 1P-18** Syntheses and properties of 8-halo-7-deazadGTP analogues for binding to the 8-oxodGTP repair enzymes  
Yosuke Taniguchi, Yizhen Yin, Shigeki Sasaki  
 Graduate School of Pharmaceutical Sciences, Kyushu University
- 1P-19** DNA Sequence-Specific Synthetic Gene Switches For Cell Fate Control  
Junichi Taniguchi<sup>1)</sup>, Ganesh Pandian Namasivayam<sup>2)</sup>, Toshikazu Bando<sup>1)</sup>, Hiroshi Sugiyama<sup>1)2)</sup>  
 1) Department of Chemistry, Graduate School of Science, Kyoto University, 2) Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University

- 1P-20** Synthesis of chemically modified siRNAs bearing high affinity molecules for human Argonaute 2 PAZ domain and their biological properties  
Yoshiaki Kitamura<sup>1)</sup>, Yuki Nagaya<sup>2)</sup>, Kazuhito Kondo<sup>1)</sup>, Ryo Asakura<sup>1)</sup>, Qin Ren<sup>2)</sup>, Mahmoud Kandeel<sup>1)</sup>, Aya Shibata<sup>1)</sup>, Masato Ikeda<sup>1)2)</sup>, Yukio Kitade<sup>1)3)</sup>  
 1) Graduate School of Engineering, Gifu University, 2) United Graduate School of Drug Discovery and Medical Information Sciences, Gifu University, 3) Faculty of Engineering, Aichi Institute of Technology
- 1P-21** Base Pair Recognition of Alpha-deoxyribonucleosides with Unmodified Nucleobase and 8-Oxo-adenine in Antiparallel DNA Triplex  
Takeshi Inde, Yoshiaki Masaki, Mitsuo Sekine, Kohji Seio  
 Department of Life Science, Tokyo Institute of Technology
- 1P-22** Oligonucleotide derivatives with phosphoryl phosphazene groups: synthesis and some properties  
Alesya Fokina<sup>1)</sup>, Valeria Apukhtina<sup>1)2)</sup>, Boris Chelobanov<sup>1)2)</sup>, Ekaterina Burakova<sup>1)</sup>, Masayuki Fujii<sup>3)</sup>, Dmitry Stetsenko<sup>1)2)</sup>  
 1) Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, 2) Novosibirsk State University, 3) Kindai University
- 1P-23** DNA circuit-based catalytic amplification of the luminescent lanthanide complexes  
Yukina Azuma, Yusuke Kitamura, Toshihiro Ihara  
 Division of Materials Science, Faculty of Advanced Science and Technology, Kumamoto University
- 1P-24** Stabilization mechanism of G-quadruplex modified with oligoethylene glycols by dispersion force  
Tatsuya Ohyama<sup>1)</sup>, Hisae Tateishi-Karimata<sup>1)</sup>, Peter Podbevsek<sup>2)</sup>, Takahiro Muraoka<sup>3)</sup>, Kazushi Kinbara<sup>3)</sup>, Shigenori Tanaka<sup>4)</sup>, Janez Plavec<sup>2)</sup>, Naoki Sugimoto<sup>1)5)</sup>  
 1) Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, 2) Slovenian NMR Center, National Institute of Chemistry, Slovenia, 3) Graduate School of Bioscience and Biotechnology, Tokyo Institute of Technology, 4) Department of Computational Science, Graduate School of System Informatics, Kobe University, 5) Graduate School of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University
- 1P-25** Effect of cyclic naphthalene diimide on the topology dependent replication reaction  
Shuntaro Takahashi<sup>1)</sup>, Hiromichi Okura<sup>1)</sup>, Shinobu Sato<sup>2)</sup>, Shigeori Takenaka<sup>2)</sup>, Naoki Sugimoto<sup>1)3)</sup>  
 1) Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, 2) Department of Applied Chemistry, Kyushu Institute of Technology, 3) Graduate School of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University
- 1P-26** Effect of molecular crowding on the nucleotide selectivity of RNA polymerase  
Hiromichi Okura<sup>1)</sup>, Shuntaro Takahashi<sup>1)</sup>, Naoki Sugimoto<sup>1)2)</sup>  
 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-27** Stabilization of A-form nucleic acid by synthetic cationic copolymers  
Yu-ki Zouzumi<sup>1)</sup>, Nonoka Yamaguchi<sup>1)</sup>, Naohiko Shimada<sup>2)</sup>, Shu-ichi Nakano<sup>1)</sup>, Naoki Sugimoto<sup>3)4)</sup>, Atsushi Maruyama<sup>2)</sup>, Daisuke Miyoshi<sup>1)</sup>  
 1) Faculty of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University, 2) Department of Biomolecular Engineering, Graduate School of Bioscience and Biotechnology, Tokyo Institute of Technology, 3) Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, 4) Graduate school of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University
- 1P-28** effects of epigenetic modifications of histone tails on transcriptional efficiency  
Kohei Murata<sup>1)</sup>, Shu Higashida<sup>1)</sup>, Smritimoy Pramanik<sup>2)</sup>, Naoki Sugimoto<sup>2)3)</sup>, Daisuke Miyoshi<sup>1)</sup>  
 1) Faculty of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University, 2) Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, 3) Graduate school of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University

- 1P-51** Stereocontrolled synthesis and properties of phosphorothioate DNA containing C5-modified pyrimidine derivatives  
Reijiro Yoshino, Yohei Nukaga, Rintaro Hara, Takeshi wada  
 Graduate School of Pharmaceutical Sciences, Tokyo University of Science
- 1P-52** Development of the allele specific PCR under the low ion PCR condition  
Fumie Takei<sup>1)</sup>, Misaki Akiyama<sup>2)</sup>, Kazuyuki Nobusawa<sup>3)</sup>, Norhayati Binti Sabani<sup>2)</sup>, Kazuhiko Nakatani<sup>2)</sup>, Ichiro Yamashita<sup>3)</sup>  
 1) Faculty of Medicine, Natioanl Defencse Medical College, 2) The Institute of Scientific and Industrial Research (ISIR), Osaka University, 3) Graduate School of Engineering, Osaka University
- 1P-53** RCT by T7 RNA polymerase on a DNA catenane template without promoter sequence  
Qi Li, Guangqi Wu, Xingguo Liang, Wei Wu, Ping Dong, Jing Li, Yiqiao Fan  
 College of Food Science and Engineerig, Ocean Universtity of China
- 1P-54** Influences of Zn(II) and Mn(II) ions on fidelity of DNA polymerases  
Riyo Sugimachi, Natsumi Tanaka, Tatsuya Funai, Yuki Miyazaki, Junsuke Hayashi, Shun-ichi Wada, Hidehito Urata  
 Osaka University of Pharmaceutical Sciences
- 1P-55** Construction of a structurally diverse library of ribonucleopeptides  
Tomoki Tamura, Shun Nakano, Takashi Morii  
 Institute of Advanced Energy, Kyoto University
- 1P-56** A label-free, superstructure-based electrochemical assay for signal-amplified DNA methyltransferase activity detection  
Hui Zhang, Yin Yang, Chenxin Cai  
 College of Chemistry and Materials Science, Nanjing Normal University
- 1P-57** DNA cleavage at the AP site by nucleobase-polyamine conjugates  
Yukiko Abe, Shigeki Sasaki  
 Graduate School of Pharmaceutical Sciences, Kyushu University
- 1P-58** DNA analysis based on template-directed formation and release of ruthenium-platinum complex  
Ryo Funaki, Yusuke Kitamura, Toshihiro Ihara  
 Division of Materials Science, Faculty of Advanced Science and Technology, Kumamoto University
- 1P-59** Metallo-regulation of the global structure of DNA conjugate carrying terpyridine units  
Yuya Nariai, Yusuke Kitamura, Toshihiro Ihara  
 Division of Materials Science, Faculty of Advanced Science and Technology, Kumamoto University
- 1P-60** Structural and crystal polymorphisms of RNA G-quadruplex formed by r(UGGGGU)  
Masayoshi Kokaku<sup>1)</sup>, Masayuki Tera<sup>2)</sup>, Jiro Kondo<sup>1)3)</sup>  
 1) Graduate School of Science and Technology, Sophia University, 2) Bioorganic Research Institute, Suntory Foundation for Life Sciences, 3) Department of Materials and Life Sciences, Sophia University
- 1P-61** Fabrication and crystallization of silver-DNA hybrid nanowire  
Yoshinari Tada<sup>1)</sup>, Takenori Dairaku<sup>2)</sup>, Hisao Saneyoshi<sup>3)</sup>, Yoshiyuki Tanaka<sup>2)4)</sup>, Akira Ono<sup>3)</sup>, Jiro Kondo<sup>1)5)</sup>  
 1) Graduate School of Science and Technology, Sophia University, 2) Graduate School of Pharmaceutical Sciences, Tohoku University, 3) Department of Material and Life Chemistry, Kanagawa University, 4) Faculty of Pharmaceutical Sciences, Tokushima Bunri University, 5) Department of Materials and Life Sciences, Sophia University

- 2P-01** Theoretical approach to the property and reaction design of DNA/proteins by through-space/bond interaction analysis and elongation method  
Yuuichi Orimoto<sup>1)</sup>, Yuriko Aoki<sup>1)2)</sup>  
 1) Kyushu University, Department of Material Sciences, Faculty of Engineering Sciences, 2) Japan Science and Technology Agency, CREST
- 2P-02** Recognition and Visualization of Human Telomeres by Pyrrole-Imidazole Polyamides  
Yusuke Kawamoto<sup>1)</sup>, Asuka Sasaki<sup>2)3)</sup>, Anandhakumar Chandran<sup>1)</sup>, Kaori Hashiya<sup>1)</sup>, Satoru Ide<sup>2)3)</sup>,  
Toshikazu Bando<sup>1)</sup>, Kazuhiro Maeshima<sup>2)3)</sup>, Hiroshi Sugiyama<sup>1)4)</sup>  
 1) Department of Chemistry, Graduate School of Science, Kyoto University, 2) Structural Biology Center, National Institute of Genetics, 3) Department of Genetics, School of Life Science, Graduate University for Advanced Studies (Sokendai),  
 4) Institute for Integrated Cell-Material Science (WPI-iCeMS), Kyoto University
- 2P-03** Invention of K<sup>+</sup>-responsive Tat-binding RNA aptamer and hammerhead ribozyme, and in-cell NMR of nucleic acids  
Yudai Yamaoki<sup>1)</sup>, Ayaka Kiyoishi<sup>2)</sup>, Tsukasa Mashima<sup>1)2)</sup>, Fumi Kano<sup>3)</sup>, Masayuki Murata<sup>4)</sup>,  
Takashi Nagata<sup>1)2)</sup>, Masato Katahira<sup>1)2)</sup>  
 1) Institute of Advanced Energy, Kyoto University, 2) Graduate School of Energy Science, Kyoto University, 3) Institute of Innovative Research, Tokyo Institute of Technology, 4) Graduate School of Arts and Sciences, The University of Tokyo
- 2P-04** Effects of DNA sequence alteration on structure of a complex between heme and all-parallel G-quadruplex  
Yasuhiko Yamamoto, Yusuke Nakano, Yuki Moritaka, Yusaku Nakayama, Yuya Katahira, Hulin Tai,  
Tomokazu Shibata  
 Department of Chemistry, University of Tsukuba
- 2P-05** Structural characterization of catalytic DNAs composed of heme and parallel G-quadruplexes  
Yuya Katahira<sup>1)</sup>, Tomokazu Shibata<sup>1)</sup>, Toru Matsui<sup>1)</sup>, Kenji Morihashi<sup>1)</sup>, Akari Watanabe<sup>2)</sup>, Tomomi Nakao<sup>2)</sup>,  
Sachiko Yanagisawa<sup>2)</sup>, Takashi Ogura<sup>2)</sup>, Yasuhiko Yamamoto<sup>1)</sup>  
 1) Dept. of Chem., Univ. of Tsukuba, Japan, 2) Grad. Sch. of Life Sci., Univ. of Hyogo, Japan
- 2P-06** Crystal structures of the bacterial ribosomal RNA in complex with fluorinated aminoglycosides  
Hiroki Kanazawa<sup>1)</sup>, Juan Pablo Maianti<sup>2)</sup>, Stephen Hanessian<sup>2)</sup>, Jiro Kondo<sup>1)3)</sup>  
 1) Graduate School of Science and Technology, Sophia University, 2) Department of Chemistry, Université de Montréal,  
 3) Department of Materials and Life Sciences, Sophia University
- 2P-07** Development of small molecule binding selectively to i-motif DNA structure  
Shadi Sedghi Masoud  
 Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology
- 2P-08** In vitro selection of DNA aptamer by beads based capillary electrophoresis  
Koji Wakui<sup>1)</sup>, Maho Tsuchida<sup>2)</sup>, Shingo Saito<sup>2)</sup>, Masami Shibukawa<sup>2)</sup>, Hitoshi Furusho<sup>3)</sup>, Keitaro Yoshimoto<sup>1)</sup>  
 1) Department of Life Sciences, Graduate School of Arts and Sciences, The University of Tokyo, 2) Graduate School of Science and Engineering, Saitama University, 3) Nissan Chemical Industries, Ltd.
- 2P-09** Cell adhesion events mediated by E-cadherin-binding DNA aptamer that forms parallel type G-quadruplex with three long loops  
Ryo Maruyama<sup>1)</sup>, Toru Yoshitomi<sup>1)</sup>, Fumiya Wayama<sup>1)</sup>, Koji Wakui<sup>1)</sup>, Hitoshi Furusho<sup>2)</sup>, Keitaro Yoshimoto<sup>1)</sup>  
 1) Department of Life Sciences, Graduate School of Arts and Sciences, The University of Tokyo, 2) Nissan Chemical Industries, Ltd.
- 2P-10** TAR RNA induces folding and emission of Tat peptide fused green fluorescent protein  
Chie Nakagawa, Kazuya Takahashi, Seiya Urata, Hiroaki Kozuka, Nanaho Abe, Keita Hamasaki  
 Department of Applied Chemistry, College of Engineering, Shibaura Institute of Technology

- 2P-11** Crystallographic studies of RNA-cleaving deoxyribozymes  
Atsuhiko Yoshimura<sup>1)</sup>, Koichi Sugasawa<sup>2)</sup>, Jiro Kondo<sup>1)2)</sup>  
1) Graduate School of Science and Technology, Sophia University, 2) Department of Materials and Life Sciences, Sophia University
- 2P-12** Structure and Stabilization of human telomere RNA G-quadruplex in molecular crowding conditions  
Hongliang Bao, Takumi Ishizuka, Yan Xu  
Department of Chemistry, Faculty of Medicine, University of Miyazaki
- 2P-13** Interaction of human telomere RNA G-quadruplex and hnRNPA1  
Xiao Liu<sup>1)2)</sup>, Takumi Ishizuka<sup>1)</sup>, Kei Wada<sup>1)</sup>, Keisuke Iida<sup>2)</sup>, Kazuo Nagasawa<sup>2)</sup>, Yan Xu<sup>1)</sup>  
1) Department of Chemistry, University of Miyazaki, 2) Tokyo University of Agriculture and Technology
- 2P-14** FRET proteins having Rev or Tat peptide as a linker changes their emission on response to corresponding RNA  
Yusuke Ito, Atsuko Kikuchi, Yutaro Shirasaka, Syougo Yokota, Naoki Ooizumi, Kazuya Takahashi, Keita Hamasaki  
Department of Applied Chemistry, Shibaura Institute of Technology
- 2P-15** Binding of amphiphilic DNA to lipid membrane regulated by formation of higher order structures  
Chikara Dohno, Hayato Yamaguchi, Shingo Makishi, Koichi Matsuzaki, Kazuhiko Nakatani  
Department of Regulatory Bioorganic Chemistry, The Institute of Scientific and Industrial Research, Osaka University
- 2P-16** Specific Binding between Metal Ion and Mismatched Base Pair Involving 4-Thiothymine  
Ayami Yaguchi<sup>1)</sup>, Ryo Akiba<sup>1)</sup>, Akira Ono<sup>2)</sup>, Hidetaka Torigoe<sup>1)</sup>  
1) Department of Applied Chemistry, Faculty of Science, Tokyo University of Science, 2) Department of Material & Life Chemistry, Faculty of Engineering, Kanagawa University
- 2P-17** Effect of Triplex DNA Formation and Triplex DNA Binding Proteins on Transcriptional Activity of T7 RNA Polymerase  
Kohta Sugiyama, Kazuki Kiuchi, Hidetaka Torigoe  
Department of Applied Chemistry, Faculty of Science, Tokyo University of Science
- 2P-18** Target Gene Detection by Peroxidase Activity of Split G-Quadruplex/Hemin Complex with Lead Ion  
Ryo Akiba, Ayami Yaguchi, Hidetaka Torigoe  
Department of Applied Chemistry, Faculty of Science, Tokyo University of Science
- 2P-19** Development of small molecules targeting the CUG repeats that cause myotonic dystrophy type 1  
Jinxing Li<sup>1)</sup>, Jun Matsumoto<sup>1)</sup>, Li-Ping Bai<sup>2)</sup>, Asako Murata<sup>1)</sup>, Chikara Dohno<sup>1)</sup>, Kazuhiko Nakatani<sup>1)</sup>  
1) Department of Regulatory Bioorganic Chemistry, The Institute of Scientific and Industrial Research, Osaka University, 2) State Key Laboratory of Quality Research in Chinese Medicine, and Macau Institute for Applied Research in Medicine and Health, Macau University of Science and Technology
- 2P-20** Formation of a new hydrogen bonding pattern by a cyanuryl nucleoside yielding a DNA triplex  
Nanae Terado<sup>1)</sup>, Akihiko Hatano<sup>1)</sup>, Mana Otsu<sup>2)</sup>, Gota Kawai<sup>2)</sup>  
1) Department of Applied Chemistry, Shibaura Institute of Technology, 2) Chiba Institute of Technology

- 2P-41** Signal amplification by DNAzyme combined with RNase H  
Ran An<sup>1)2)</sup>, Hayato Kawai<sup>2)</sup>, Hiroyuki Asanuma<sup>2)</sup>, Xingguo Liang<sup>1)</sup>  
 1) College of Food Science and Engineering, Ocean University of China, 2) Graduate School of Engineering, Nagoya University
- 2P-42** Azobenzene-tethered amphiphilic oligonucleotides as radiation-activated drug carrier  
Takuma Itagaki, Ryohsuke Kurihara, Kazuhito Tanabe  
 Department of Science and Engineering, Aoyama gakuin University
- 2P-43** Evaluation delivery of antisense oligonucleotides using PEG-modified  $\beta$ -glucans  
Daiki Ito, Yoshiya Maegawa, Shinichi Mochizuki, Kazuo Sakurai  
 Department of Life and Environment Engineering, The University of Kitakyusyu
- 2P-44** Direct observation of the duplex formation and dissociation in the G-quadruplex-/i-motif-forming site  
Masayuki Endo<sup>1)</sup>, Xiwen Xing<sup>2)3)</sup>, Xiang Zhou<sup>3)</sup>, Tomoko Emura<sup>2)</sup>, Kumi Hidaka<sup>2)</sup>, Bodin Tuesuwan<sup>4)</sup>, Hiroshi Sugiyama<sup>1)2)</sup>  
 1) Institute for Integrated Cell-Material Sciences, Kyoto University, 2) Graduate School of Science, Kyoto University, 3) Wuhan University, 4) Chulalongkorn University
- 2P-45** Preparation and Cellular Uptake of DNA/Chitosan Nanoparticles for Astaxanthin Delivery  
Yingyuan Zhao, Qian Wang, Jing Li, Xingguo Liang, Baihui Wan, Yaping Zhang  
 College of Food Science and Engineering, Ocean University of China
- 2P-46** Efficient delivery of nucleic acid medicines using DNA nanostructure  
Shuto Tokunaga<sup>1)</sup>, Shinichi Mochizuki<sup>2)</sup>, Noriko Miyamoto<sup>3)</sup>, Kazuo Sakurai<sup>4)</sup>  
 1) Department of Chemistry and Biochemistry, University of Kitakyushu, 2) Department of Chemistry and Biochemistry, University of Kitakyushu, 3) Department of Chemistry and Biochemistry, University of Kitakyushu, 4) Department of Chemistry and Biochemistry, University of Kitakyushu
- 2P-47** Preparation and evaluation of DNA-Chitosan nanocomplex as novel drug carriers  
Jing Li, Yingyuan Zhao, Yaping Zhang, Lei Guan, Ping Dong, Xingguo Liang  
 College of Food Science and Engineering, Ocean University of China
- 2P-48** Analysis of  $\beta$ -glucan receptor for DDS application of SPG/DNA complex  
Nobuaki Fujiwara<sup>1)</sup>, Hiroto Izumi<sup>2)</sup>, Shinichi Mochizuki<sup>1)</sup>, Shohei Nagao<sup>1)</sup>, Yasuo Morimoto<sup>2)</sup>, Kazuo Sakurai<sup>1)</sup>  
 1) Department of Chemistry and Biochemistry, The University of Kitakyushu, 2) The University of Occupational and Environmental Health, Japan
- 2P-49** Organizing three-dimensional DNA origami components into a crystalline structure having pores with designed geometry  
Yuki Suzuki<sup>1)2)</sup>, Ibuki Kawamata<sup>2)</sup>, Satoshi Murata<sup>2)</sup>  
 1) Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, 2) Department of Robotics, Graduate School of Engineering, Tohoku University
- 2P-50** Novel Drug Delivery System for targeting circulating microRNA  
Asako Yamayoshi<sup>1)2)</sup>, Yusuke Kishimoto<sup>2)3)</sup>, Rie Tamura<sup>4)</sup>, Chie Muramatsu<sup>4)</sup>, Akio Kobori<sup>3)</sup>, Eishi Ashihara<sup>4)</sup>, Akira Murakami<sup>4)</sup>  
 1) The Hakubi Center for Advanced Research, Kyoto University, 2) Department of Chemistry, Graduate School of Science, Kyoto University, 3) Graduate School of Science and Technology, Kyoto Institute of Technology, 4) Department of Clinical and Translational Physiology, Kyoto Pharmaceutical University
- 2P-51** Immunity control by crosslinked-nanogel consist of two types back bone CpG-ODN  
Noriko Miyamoto, Kazuo Sakurai, Shinichi Mochizuki  
 The university of Kitakyushu

- 2P-52** A Facile Synthesis of Peptide Nucleic Acid by Using Hydrophobic Soluble Tag  
Keisuke Ogami<sup>1)</sup>, Yohei Okada<sup>2)</sup>, Yoshikazu Kitano<sup>1)</sup>, Kazuhiro Chiba<sup>1)</sup>  
 1) Department of applied science, United graduate school of agricultural science, Tokyo university of agriculture and technology, 2) Graduate school of bio-applications and systems engineering, Tokyo university of agriculture and technology
- 2P-53** Cleavage of target DNA promotes sequence conversion with a tailed duplex  
Hiroyuki Kamiya<sup>1)2)3)</sup>, Tetsuya Suzuki<sup>1)</sup>, Takashi Imada<sup>1)</sup>, Natsuki Nishigaki<sup>1)2)</sup>, Miwako Kobayashi<sup>3)</sup>, Ichiro Matsuoka<sup>3)</sup>  
 1) Graduate School of Biomedical and Health Sciences, Hiroshima University, 2) Graduate School of Science and Engineering, Ehime University, 3) College of Pharmaceutical Sciences, Matsuyama University
- 2P-54** Development of a DNA aptamer for detection of the salivary stress marker alpha-amylase  
Hiroataka Minagawa<sup>1)</sup>, Masayasu Kuwahara<sup>2)</sup>, Taiichi Sakamoto<sup>3)</sup>, Joe Akitomi<sup>1)</sup>, Naoto Kaneko<sup>1)</sup>, Ikuo Shiratori<sup>1)</sup>, Katsunori Horii<sup>1)</sup>, Iwao Waga<sup>1)</sup>  
 1) Innovation Laboratory, NEC Solution Innovators, 2) Graduate School of Science and Technology, Gunma University, 3) Department of Life and Environmental Sciences, Chiba Institute of Technology
- 2P-55** Aptamer-based biosensors for rapid detection of stress markers  
Naoto Kaneko<sup>1)</sup>, Hiroataka Minagawa<sup>1)</sup>, Joe Akitomi<sup>1)</sup>, Keishi Ohashi<sup>2)</sup>, Shigeki Kuroiwa<sup>2)</sup>, Shofarul Wustoni<sup>2)</sup>, Sho Hideshima<sup>2)</sup>, Tetsuya Osaka<sup>2)</sup>, Katsunori Horii<sup>1)</sup>, Iwao Waga<sup>1)</sup>  
 1) Innovation Laboratory, NEC Solution Innovators, 2) Research Organization for Nano & Life Innovation, Waseda University
- 2P-56** Disassembly-driven signal turn-on probe for multimodal detection of DNAs using <sup>19</sup>F NMR and Fluorescence  
Takashi Sakamoto, Daisaku Hasegawa, Kenzo Fujimoto  
 School of Materials Science, Japan Advanced Institute of Science and Technology
- 2P-57** Controlling gene expression in a predatory bacterium using synthetic riboswitches  
Mohammed Essameldin Ibrahim Dwidar, Yohei Yokobayashi  
 Nucleic Acid Chemistry and Engineering Unit, Okinawa Institute of Science and Technology Graduate University
- 2P-58** Construction of photo regulation system of protein expression in *Synechocystis* sp. PCC 6803  
Chika Shono<sup>1)2)</sup>, Koichi Abe<sup>1)2)</sup>, Yuta Sakai<sup>1)2)</sup>, Ippei Sakamoto<sup>1)2)</sup>, Kaori Tsukakoshi<sup>1)</sup>, Koji Sode<sup>1)2)</sup>, Kazunori Ikebukuro<sup>1)2)</sup>  
 1) Department of Biotechnology and Life Science, Graduate School of Engineering, Tokyo University of Agriculture and Technology, Japan , 2) Japan Science and Technology Agency, CREST
- 2P-59** Synthesis and Hg(II) ion adsorption of synthetic polymers having thymine residues  
Akira Ono, Kai Anakubo, Kentaro Ota, Hisao Saneyoshi  
 Department of material & life chemistry, Faculty of engineering, Kanagawa University
- 2P-60** New green and orange fluorescent DNA probes: design and applications to live cells  
Akinobu Nakamura<sup>1)</sup>, Kazumasa Takigawa<sup>2)</sup>, Shinya Tsukiji<sup>3)4)</sup>  
 1) Department of Materials Science and Engineering, Nagoya Institute of Technology, 2) Department of Bioengineering, Nagaoka University of Technology, 3) Frontier Research Institute for Materials Science (FRIMS), Nagoya Institute of Technology, 4) Department of Life Science and Applied Chemistry, Nagoya Institute of Technology
- 2P-61** Photochemical properties of DNA-bound flavin  
Tatsuya Iwata, Michiko Hayakawa, Hideki Kandori  
 Graduate School of Engineering, Nagoya Institute of Technology
- 2P-62** Hepsin-targeted ligands for prostate cancer imaging and therapy  
Youngjoo Byun, Hongmok Kwon, Milan Subedi, Sunju Hong, Kyul Kim, YunHye Kim, Sang-Hyun Son  
 Department of Pharmacy, Korea University

# Abstract

## Invited Lecture

- 1IL-01** Marvin H. Caruthers
- 1IL-02** Xing-Hua Xia
- 1IL-03** Kazuo Sakurai
- 1IL-04** Weihong Tan
- 2IL-01** Vyacheslav V. Filichev
- 2IL-02** Danzhou Yang
- 2IL-03** Steven C. Zimmerman
- 3IL-01** Piet Herdewijn
- 3IL-02** Dmitry Stetsenko
- 3IL-03** Christian J. Leumann

## Oral Presentations

## Poster Presentations

# Program at a Glance

	27-Sep, Tue	28-Sep, Wed	29-Sep, Thr
8:50	8:50~9:00 <b>Opening Remarks</b>		
9:00	9:00~10:00 <b>Oral Presentations</b> 9:00 10-01 Ikuya Oshiro 9:15 10-02 Ambadas B. Rode 9:30 10-03 Sanjukta Mukherjee 9:45 10-04 Chao-da Xiao	9:00~10:00 <b>Oral Presentations</b> 9:00 20-01 Hiroshi Ohrai 9:15 20-02 Akira Ono 9:30 20-03 Takehiko Wada 9:45 20-04 Yohei Yokobayashi	9:00~10:00 <b>Oral Presentations</b> 9:00 30-01 Keiji Murayama 9:15 30-02 Tadao Takada 9:30 30-03 Kiyohiko Kawai 9:45 30-04 Yuka Kataoka
10:00	10:00~10:15 <b>Break</b>	10:00~10:15 <b>Break</b>	10:00~10:15 <b>Break</b>
	10:15~10:55 <b>Invited Lecture</b> 1IL-01 Marvin H. Caruthers	10:15~10:55 <b>Invited Lecture</b> 2IL-01 Vyacheslav V. Filichev	10:15~10:55 <b>Invited Lecture</b> 3IL-01 Piet Herdewijn
11:00	10:55~11:25 <b>Oral Presentations</b> 10:55 10-05 Thang M. Nguyen 11:10 10-06 Yuichiro Aiba	10:55~11:25 <b>Oral Presentations</b> 10:55 20-05 Shigeyoshi Matsumura 11:10 20-06 Atsushi Maruyama	10:55~11:25 <b>Oral Presentations</b> 10:55 30-05 Akinori Kuzuya 11:10 30-06 Hiroshi Abe
	11:25~11:40 <b>Break</b>	11:25~11:40 <b>Break</b>	11:25~11:40 <b>Break</b>
12:00	11:40~12:20 <b>Invited Lecture</b> 1IL-02 Xing-Hua Xia	11:40~12:20 <b>Invited Lecture</b> 2IL-02 Danzhou Yang	11:40~12:20 <b>Invited Lecture</b> 3IL-02 Dmitry A. Stetsenko
	12:20~12:50 <b>Oral Presentations</b> 12:20 10-07 Kazumitsu Onizuka 12:35 10-08 Keiko Kondo	12:20~12:50 <b>Oral Presentations</b> 12:20 20-07 Marina A. Zenkova 12:35 20-08 Kunihiko Kaihatsu	12:20~12:50 <b>Oral Presentations</b> 12:20 30-07 Xingguo Liang 12:35 30-08 Jiro Kondo
13:00	12:50~13:50 <b>Lunch Break</b>	12:50~13:50 <b>Lunch Break</b> <b>Lunchon Seminar</b> sponsored by ChemGenes	12:50~13:50 <b>Lunch Break</b>
14:00	13:50~15:20 <b>Poster Presentation</b> 1P-n	13:50~15:20 <b>Poster Presentation</b> 2P-n	13:50~14:30 <b>Invited Lecture</b> 3IL-03 Christian J. Leumann
15:00	15:20~15:50 <b>Oral Presentations</b> 15:20 10-09 Gosuke Hayashi 15:35 10-10 Yoshiaki Masaki	15:20~16:05 <b>Oral Presentations</b> 15:20 20-09 Ryosuke Ueki 15:35 20-10 Hiromu Kashida 15:50 20-11 Shigeori Takenaka	14:30~15:30 <b>Oral Presentations</b> 14:30 30-09 Kosuke Nakamoto 14:45 30-10 Huyen T. T. Dinh 15:00 30-11 Yohei Nukaga 15:15 30-12 Mariko Aso
16:00	15:50~16:30 <b>Invited Lecture</b> 1IL-03 Kazuo Sakurai	16:05~16:45 <b>Invited Lecture</b> 2IL-03 Steven C. Zimmerman	15:30~15:40 <b>Closing Remarks</b>
	16:30~16:45 <b>Break</b>		
17:00	16:45~17:25 <b>Invited Lecture</b> 1IL-04 Weihong Tan	16:45~17:00 <b>Break</b>	
	17:25~17:55 <b>Oral Presentations</b> 17:25 10-11 Qingming Shen 17:40 10-12 Rakesh N. Veedu	17:00~18:00 <b>Briefing</b>	
18:00			
19:00			
20:00		19:00~ <b>Exchange Meeting</b> Venue: Kumamoto Hotel Castle	
21:00			