



ISNAC 2013

The 40th International Symposium on
Nucleic Acids Chemistry

第40回 国際核酸化学シンポジウム

Program & Abstracts

Period November 13 (Wed.)—15 (Fri.), 2013

Venue Kanagawa University
Building 16 (Celest Hall) & Building 2
神奈川大学 16号館 (セレストホール)、2号館

Organizer Prof. Akira ONO
Kanagawa University



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Building 16 (Celest Hall) & Building 2
3-27-1, Rokkakubashi, Kanagawa-ku, Yokohama-shi,
Kanagawa, 221-8686, JAPAN

Organizer Prof. Akira ONO Kanagawa University

Sponsored by

The Organizing Committee of International Symposium on Nucleic Acid Chemistry

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Welcome to ISNCA2013 in Yokohama!

On behalf of the organizing committee and executive committee of the 40th International Symposium on Nucleic Acids Chemistry (ISNAC2013), We cordially invite you to attend ISNAC2013, which will be held during November 13 - 15, 2013 at Kanagawa University, Yokohama, Japan.

First, let us briefly introduce the city of Yokohama. Yokohama is the capital city of Kanagawa Prefecture. Its population is 3.7 million, whose number is the second in the country, after Tokyo. It used to be a very small village; the number of houses was only 100 in maximum. The place was where Convention of Kanagawa (Treaty of Peace and Amity between the United States and Japan) was concluded at 1854. It was only 4 years after when the Yokohama Port opened. Since then, Yokohama office turned out to be a symbol of international, new Japan. Now, it is known as a beautiful harbor city where people enjoy a wide range of culture, observation of nature, cuisine, and sightseeing of historical places. Yokohama owns many attractive facilities, including a modern Minato Mirai 21 district, Sankei-en (a traditional Japanese garden), and the world's largest Chinatown. It is also a sister city to many famous cities; San Diego, Lyon, Manila, Bombay, and so on. You are able to experience the most cheerful atmosphere of Japan during your stay for the Symposium.

This symposium has started from 1973 as an annual domestic meeting of Nucleic Acids Chemists in Japan, and has become an international symposium in 2005 by inviting Nucleic Acids Chemists from all over the world. Nowadays, ISNAC is one of the biggest symposiums of bio-related chemistry in the world. This symposium covers diverse aspects of genetic technology, molecular biology, nano-biotechnology, and the therapeutic and diagnostic applications of this field as well as Nucleic Acids Chemistry. Thus, it is a great honor for us to host the 40th International Symposium on Nucleic Acids Chemistry in Yokohama. We have planned an exciting scientific program with invited speakers from the world. We are sure that all the participants will disclose recent development of their studies and have fruitful discussion.

Again, We cordially invite you to participate in ISNAC2013, on behalf of the organizing committee and executive committee. We are very much looking forward to seeing all of you in Yokohama!



Chairman of ISNAC 2013
Akira ONO
Kanagawa University

Information for Participants, Chairs and Presenters

Information for Participants

1. Reception & Cloak

On-site registration, certificate issuing, cloak and other general inquiries are available during the following hours at the venue.

Date	Open Hours
Nov. 13 (Wed)	8:10-18:00
Nov. 14 (Thu)	8:30-17:40
Nov. 15 (Fri)	8:30-15:00

<Place of the Reception >

* Reception: Building 16 2nd Floor

* Cloak: Building 16 1st Floor

< On-site Registration fee >

* Regular: 30,000JPY

* Student: 5,000JPY

Only payment in Japanese yen in cash is acceptable.

Identification is required for student registration.

2. Exchange Meeting

Nov. 14 (Thu) 19:00 – 21:00 at Yokohama Royal Park Hotel 70 F

Place: YOKOHAMA ROYAL PARK HOTEL

Address: 2-2-1-3 MINATO MIRAI, NISHI-KU, YOKOHAMA, 220-8173

* Exchange meeting fee is included in regular participants' registration fee.

* Application on-site is available for 5,000JPY.

3. Awards

ISNAC2013 offers "ISNAC Outstanding Oral Presentation Award for Young Scientist in 2013" and "ISNAC Outstanding Poster Award in 2013".

Awardees' names and affiliations will be announced and commended at the Exchange Meeting (Nov. 14).

Instruction for Chairs

1. Stand-by

Chairpersons are requested to be seated at the "next chairs' sheet" located in the right front of the hall no later than 10 minutes before the start of the presentations.

2. Session Progress

Chairpersons are asked to ensure that all presentations start and finish punctually as scheduled. Staffs will assist with timing. Remaining time will be notified with bell signal as follows;

- 1 ring: Warning - at 3 minutes left to the end of talk
- 2 rings: End of talk - time for discussion
- 3 rings: End of presentation - time for the next speaker

Instruction for Oral Presenters

1. Time Allocation

Invited Lectures: Presentation 35 min. + Discussion 5 min. (Total: 40min.)

Oral Presentations: Presentation 12 min. + Discussion 3 min. (Total: 15min.)

2. Presentation Materials

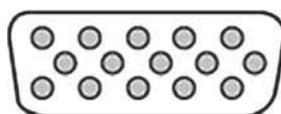
Only computer-based Powerpoint presentations will be accepted, and no sound output equipment will be available.

3. Laptop Computer

Please be sure to bring your own laptop computer. We ask you to bring your presentation file in USB or CD-ROM for back up as well.

< Technical Requirements for Your Laptop Computer >

- Ensure that your computer is equipped with the proper monitor connector (mini D-sub 15 pin) as shown below. If your computer does not have this connection, please bring an appropriate converter with you.
- Be sure to bring an AC adaptor. Please note that voltage in Japan is 100 V and the frequency ranges 50-60 Hz depending on the area (50 Hz in Yokohama).
The socket is type A, which has two flat plug holes. If your laptop is not convertible, transformers and/or plug adaptors are necessary.
- Adjust the settings to prevent activation of the screen saver or power-saving mode.



mini D-sub 15 pins



Plug

4. Preparation

Please bring your computer to the Oral Presentation Hall stage during coffee or lunch break before your presentation.

5. Timing

In order to maintain the schedule, you are requested to keep time allocation strictly.

Remaining time will be notified with bell signal as follows;

- 1 ring: Warning - at 3 minutes left to the end of talk
- 2 rings: End of talk - time for discussion
- 3 rings: End of presentation - time for the next speaker

Instruction for Poster Presenters

1. Set-up and Removal

Set-up and removal time will be as following.

	Set-up	Removal
Odd Numbers	10:00	15:30
Even Numbers	10:00	15:30

* Please attach the poster to the board by pins. The committee will prepare pins.

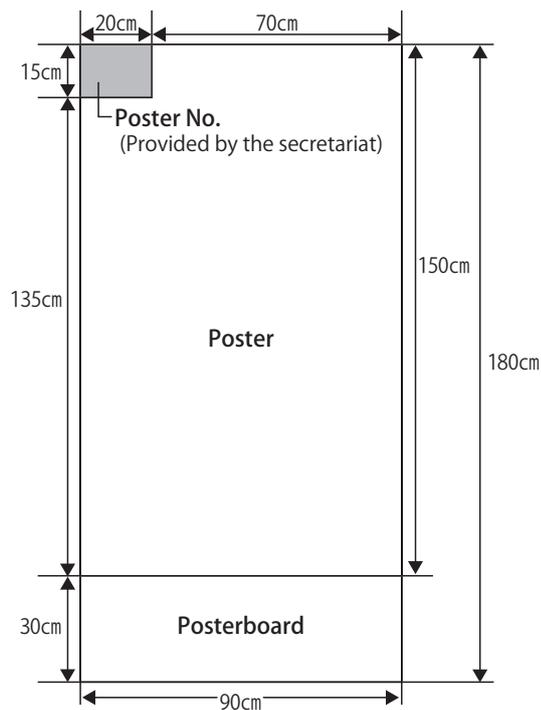
* Please remove the poster when your presentation has finished. The poster will be changed every day. Any posters remaining on panels after the removal time will be discarded by the secretariat.

2. Poster Presentation time

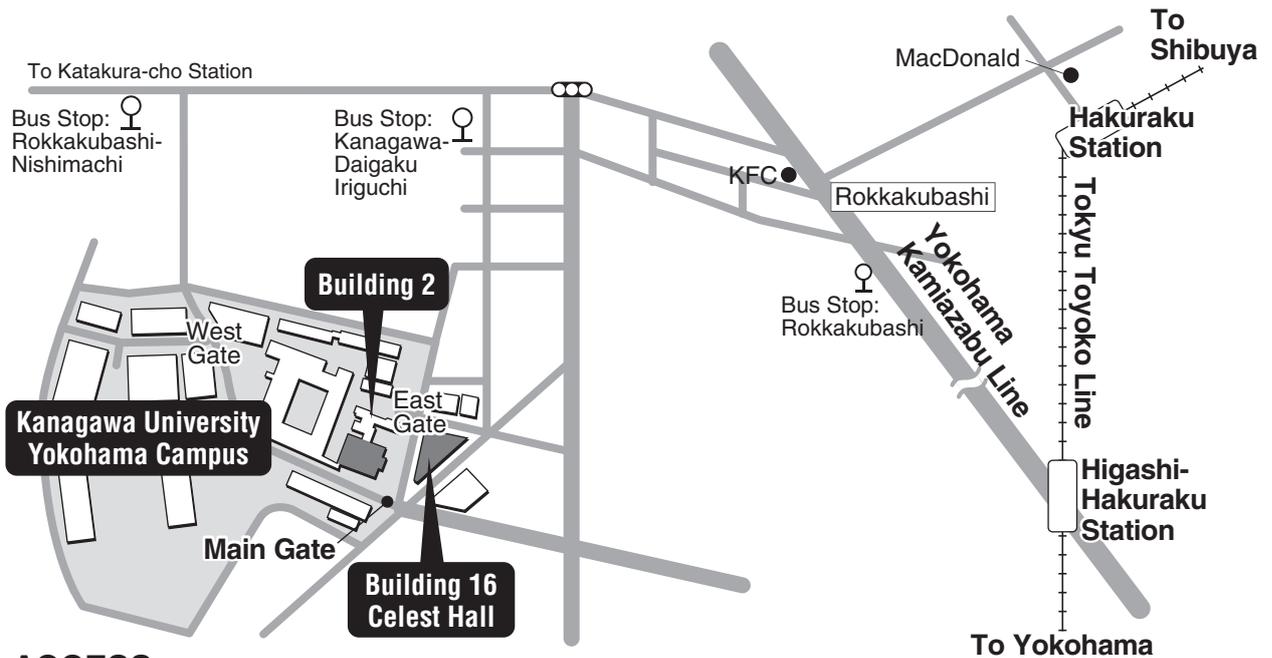
Odd numbers: Nov. 13 (Wed) 14:00 – 15:30

Even numbers: Nov. 14 (Thu) 14:00 – 15:30

3. Poster Dimensions

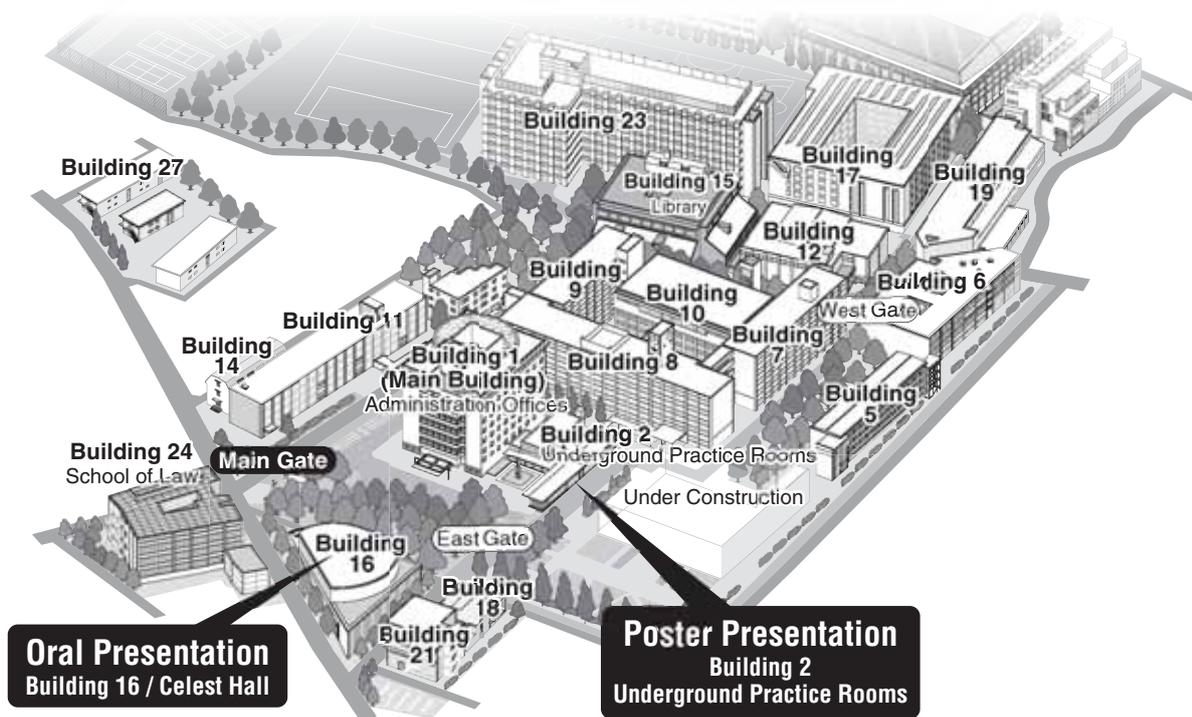


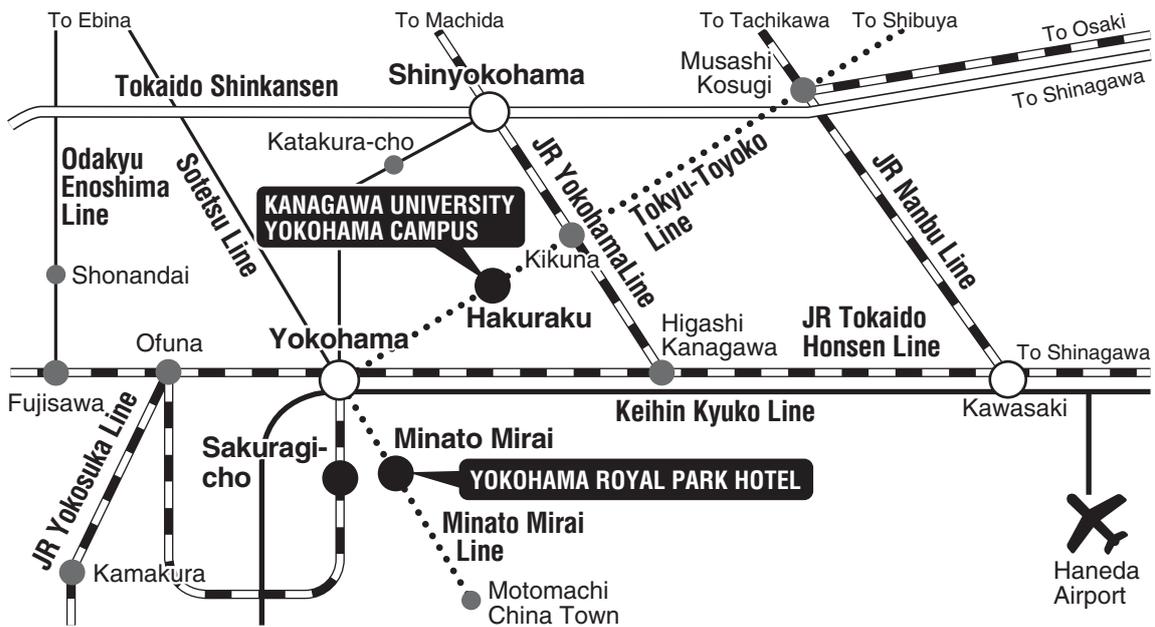
Around the Venue



ACCESS

- 13 minutes walk after getting of the Tokyu Toyoko Line train at Hakuraku St.
- Using Yokohama Municipal Bus (via Higashi Kanagawa St. West Gate) from Yokohama St. West Gate Terminal
[Platform 1 Route 36]
14 minute trip by bus to Sugetacho/Midori Shako, get off at Kanagawa-Daigaku Iriguchi
[Platform 1 Route 8]
14 minute trip by bus to Hattanbashi/Kandaiji Iriguchi, get off at Kanagawa-Daigaku Iriguchi
- Using the Yokohama Municipal Bus from Yokohama Municipal Subway Katakuracho Station
[Terminal 2 Routes 36 and 82]
6 minute trip by bus for Higashi Kanagawa St. West Gate or Yokohama St. West Gate
Get off at Kanagawa-Daigaku Iriguchi
- Please restrain from using car to come as there are no parking spaces.



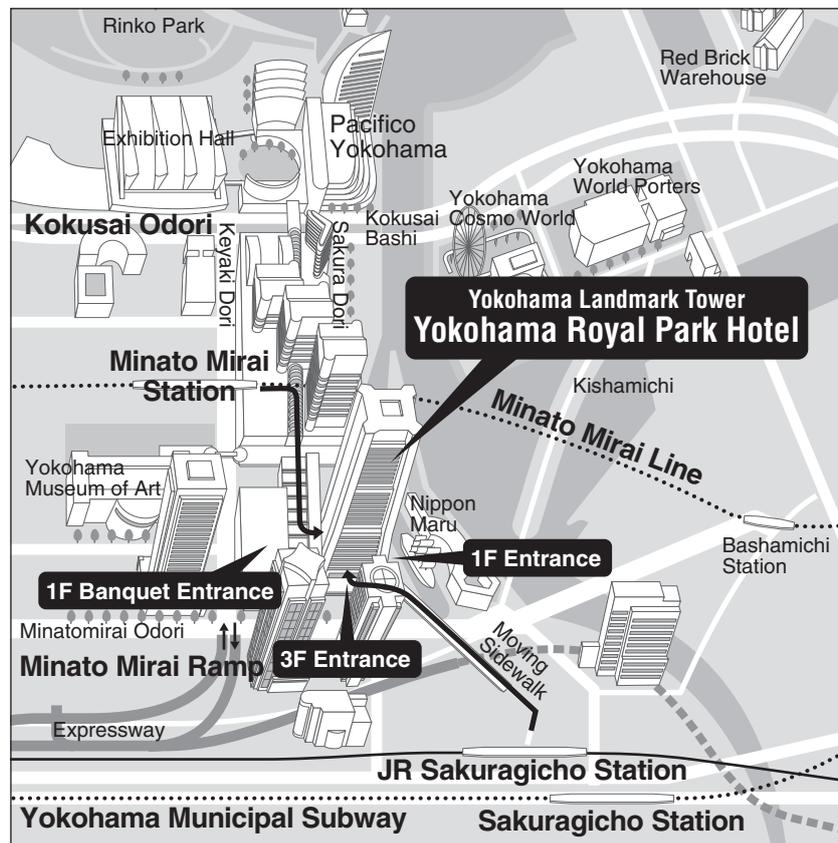


Train Route Map : Nearest Stop

- KANAGAWA UNIVERSITY : Hakuraku Station (Tokyu-Toyoko Line)
- YOKOHAMA ROYAL PARK HOTEL : Minato Mirai Station (Minato Mirai Line)
- * Tokyu-Toyoko Line and Minato Mirai Line operates directly (no transfer needed).

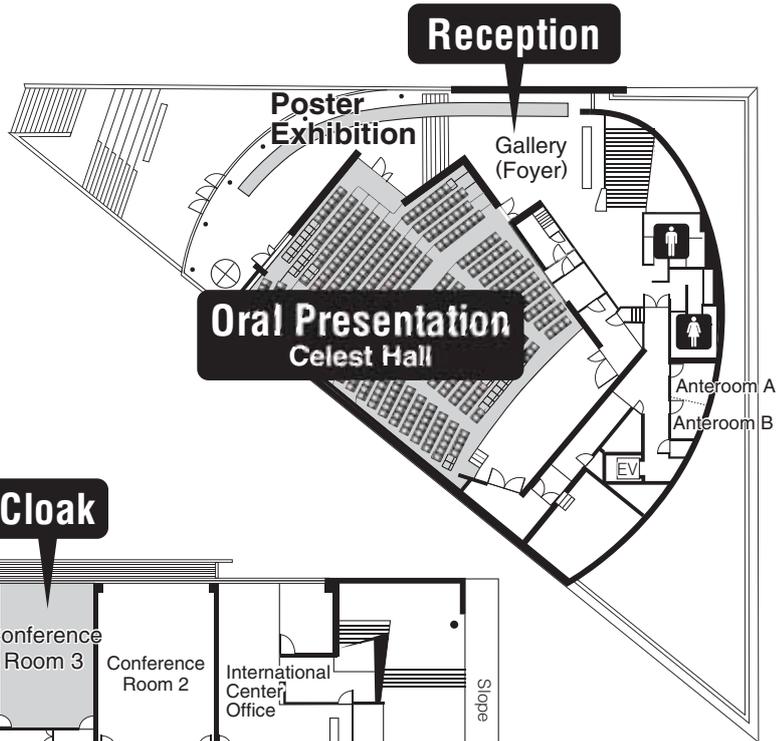
Access to Reception Hall : YOKOHAMA ROYAL PARK HOTEL

- 3 minutes' walk from "Minato Mirai" Station.
- * To "Minato Mirai" Station, take the Tokyu Toyoko Line from "Hakuraku" Station. It takes about 10 minutes.



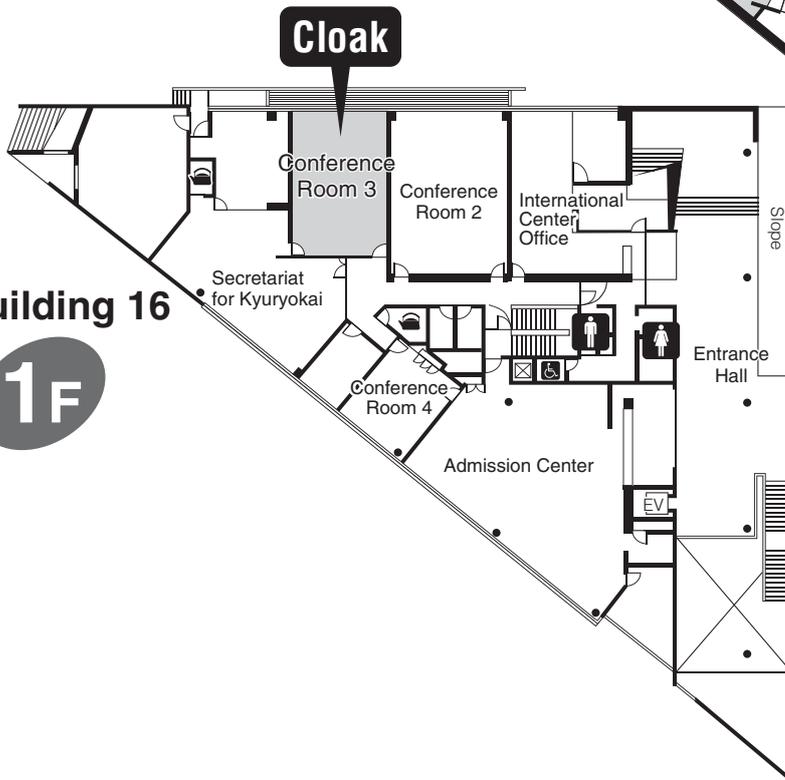
Building 16

2F



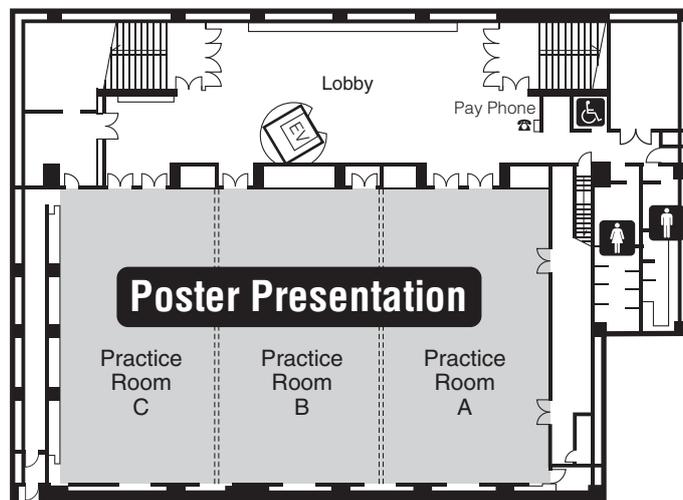
Building 16

1F



Building 2

B2F



Program

Day 1: November 13 (Wed)

8:50-9:00	Opning Remarks	
9:00-9:15	Oral Presentations Chair: Kohji Seio Tokyo Institute of Technology	10-01 Synthesis of Boron-Containing Antisense Molecules by the <i>H</i> -Boranophosphonate Method <u>Sho Uehara</u> ¹⁾²⁾ , Shingo Hiura ¹⁾ , Renpei Higashida ¹⁾ , Natsuhisa Oka ⁴⁾ , Takeshi Wada ¹⁾²⁾³⁾ 1) The University of Tokyo, Department of Medical Genome Sciences, 2) JST-CREST, 3) Tokyo University of Science, Department of Medicinal and Life Science, 4) Gifu University, Department of Chemistry and Biomolecular Science
9:15-9:30		10-02 An antiproliferative effect by targeting oncogene with antigene oligonucleotides containing WNA- β T in an anti-parallel triplex formation <u>Yosuke Taniguchi</u> , Shigeki Sasaki Kyushu University, Department of Pharmaceutical Sciences
9:30-9:45	Oral Presentations Chair: Takeshi Wada Tokyo University of Science	10-03 Synthesis of Serinol Nucleic Acid (SNA) with unique properties <u>Hironu Kashida</u> , Keiji Murayama, Hiroyuki Asanuma Nagoya University, Graduate School of Engineering
9:45-10:00		10-04 Synthesis of oligodeoxynucleotides incorporating conformational restriction at the 5'-terminus and their application to discrimination of RNA length variants <u>Yoshihiro Iijima</u> ¹⁾ , Sayako Kurohagi ¹⁾ , Erika Kodama ¹⁾ , Shun Kojima ¹⁾ , Takashi Kanamori ¹⁾²⁾ , Yoshiaki Masaki ¹⁾ , Akihiro Ohkubo ¹⁾ , Mitsuo Sekine ¹⁾ , Kohji Seio ¹⁾ 1) Tokyo Institute of Technology, Department of Life Science, 2) Tokyo Institute of Technology, Education Academy of Computational Life Science
10:00-10:15	Break	
10:15-10:55	Invited Lecture Chair: Hiroshi Abe Hokkaido University	1L-01 PNA-programmed Self Assemblies in Chemical Biology <u>Nicolas Winssinger</u> Organic chemistry department - University of Geneva 30, quai Ernest-Ansermet, CH-1211 Geneva 4 - Switzerland
10:55-11:10	Oral Presentations Chair: Kazuhiko Nakatani Osaka University	10-05 <i>In vitro</i> selection for macrocyclic peptides leading to inhibitors and cocrystallization ligands for PFMATE <u>Christopher John Hipolito</u> ¹⁾ , Yoshiki Tanaka ²⁾ , Takayuki Katoh ¹⁾ , Osamu Nureki ²⁾ , Hiroaki Suga ¹⁾ 1) The University of Tokyo, Graduate School of Science, Department of Chemistry, 2) The University of Tokyo, Graduate School of Science, Department of Biophysics and Biochemistry
11:10-11:25		10-06 DNA-based Hybrid Catalysts Using the Covalent Anchoring Strategy: Structural Understanding of DNA-based Asymmetric Catalysis <u>Soyoung Park</u> ¹⁾ , Linjie Zheng ¹⁾ , Shunsuke Kumakiri ¹⁾ , Haruka Otomo ¹⁾ , Hiroshi Sugiyama ¹⁾²⁾ 1) Kyoto University, Department of Chemistry, 2) Institute for Integrated Cell-Materials Science (iCeMS), Kyoto University
11:25-11:40	Break	

11:40-12:20	Invited Lecture Chair: Shigeori Takenaka Kyushu Institute of Technology	1L-02 Signal Amplification Strategies for Electrochemical Nucleic Acid based Sensing Platform <u>I-Ming Hsing</u> Division of Biomedical Engineering and Department of Chemical and Biomolecular Engineering, the Hong Kong University of Science and Technology, Hong Kong
12:20-12:35	Oral Presentations Chair: Yoshihito Ueno Gifu University	10-07 Dual-quadruplex forming ribozyme distinctly switches on its activity in response to K ⁺ <u>Yudai Yamaoki</u> ¹⁾²⁾³⁾ , Tsukasa Mashima ¹⁾ , Takashi Nagata ¹⁾²⁾ , Masato Katahira ¹⁾²⁾ 1) Kyoto University, Institute of Advanced Energy, 2) Kyoto University, Graduate school of energy science, 3) JSPS Research Fellow
12:35-12:50		10-08 RNAi induced by short RNA fragments <u>Hideto Maruyama</u> ¹⁾²⁾ , Akira Matsuda ¹⁾ , Yoshihiro Ito ²⁾ , Hiroshi Abe ¹⁾²⁾³⁾ 1) Hokkaido University, Faculty of Pharmaceutical Sciences, 2) RIKEN, 3) JST PRESTO
12:50-14:00	Break	
14:00-15:30	Poster Presentations (Odd Numbers)	
15:30-15:45	Oral Presentations Chair: Ichiro Hirao RIKEN	10-09 New insights into transcription fidelity: Stability of non-canonical structures in template DNA regulates transcription arrest, pause and slippage <u>Hisae Tateishi-Karimata</u> ¹⁾ , Naoki Sugimoto ¹⁾²⁾ 1) Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, 2) Faculty of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University
15:45-16:00		10-10 Self-priming elongation of simple repetitive sequence by DNA polymerase <u>Xingguo Liang</u> ¹⁾²⁾ , Yang Wang ¹⁾ , Xianming Tao ¹⁾ , Ping Dong ¹⁾ , Tomohiro Kato ²⁾ , Hiroyuki Asanuma ²⁾ 1) College of Food Science and Engineering, Ocean University of China., 2) Department of Molecular Design and Engineering, Graduate School of Engineering, Nagoya University, Chikusa, Nagoya 464-8603, Japan
16:00-16:15		10-11 Enzymatic incorporation of unnatural ImN ^N : NaO ⁰ base pair consisting of four hydrogen bonds. <u>Noriko Tarashima</u> , Naoshi Yamazaki, Kazuhiro Furukawa, Noriaki Minakawa The University of Tokushima, Graduate School of Pharmaceutical Sciences
16:15-16:55	Invited Lecture Chair: Kazuo Shinozuka Gunma University	1L-03 Polymerase synthesis of base-modified DNA. New methods and new applications <u>Michal Hocek</u> ¹⁾²⁾ 1) Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, Gilead Sciences & IOCB Research Center, Flemingovo nam. 2, CZ-16610 Prague 6, Czech Republic; 2) Dept of Organic Chemistry, Faculty of Science, Charles University in Prague, Hlavova 8, CZ-12843 Prague 2, Czech Republic. hocek@uochb.cas.cz
16:55-17:10	Break	

17:10-17:25	Oral Presentations Chair: Akio Kobori Kyoto Institute of Technology	10-12 Design of a universal module sequence for an aptamer sensor based on an allosteric DNzyme <u>Yasuyuki Tomita</u> ¹⁾ , Yuji Morita ¹⁾ , Taeko Akiyoshi ¹⁾ , Hiroaki Suga ²⁾ , Daisuke Fujiwara ¹⁾ 1) Central Laboratories for Key Technologies, KIRIN Company, Ltd., 2) Department of Chemistry, Graduate School of Science, The University of Tokyo
17:25-17:40		10-13 Tumor-targeted delivery of miR-499 via systemic administration for advanced cancer therapy by vascular normalization <u>Hidenori Ando</u> ¹⁾ , Tomohiro Asai ¹⁾ , Takehisa Dewa ²⁾ , Tetsuo Minamino ³⁾ , Naoto Oku ¹⁾ 1) University of Shizuoka, Department of Medical Biochemistry, 2) Nagoya Institute of Technology, Department of Life and Materials Engineering, 3) Osaka University, Department of Cardiovascular Medicine
17:40-18:20	Invited Lecture Chair: Naoki Sugimoto Konan University	1L-04 Rational design of small molecules targeting RNA from sequence <u>Matthew D. Disney</u> ¹⁾ , Sai Velagapudi ²⁾ , Jessica Childs-Disney ¹⁾ , Lirui Guan ¹⁾ , Suzanne Rzuczek ¹⁾ 1) Department of Chemistry The Scripps Research Institute Jupiter Florida 33458 USA
18:20-18:35	Oral Presentations Chair: Takehiko Wada Tohoku University	10-14 Development of the molecular probes for the selective chemical modification in an Abasic site. <u>Gen-ichiro Tsuji</u> , Norihiro Sato, Takuma Moki, Fumi Nagatsugi Institute of Multidisciplinary Research for Advanced Materials, Tohoku University
18:35-18:50		10-15 Laser desorption supersonic jet spectroscopy of uric acid-melamine complex: Structural identification in the gas phase <u>Hiroya Asami</u> ¹⁾ , Shu-hei Urashima ²⁾ , Hiroyuki Saigusa ²⁾ , Masaaki Fujii ¹⁾ 1) Chemical Spectroscopy Division, Chemical Resources Laboratory, Tokyo Institute of Technology, 2) Graduate School of Nanobioscience, Yokohama City University

Day 2: November 14 (Thu)

9:00-9:15	Oral Presentations Chair: Kenzo Fujimoto Japan Advanced Institute of Science and Technology	20-01 Development of a homodimeric adaptor for constructing an artificial protein assembly on molecular switchboard <u>Tien Anh Ngo</u> ¹⁾ , Eiji Nakata ¹⁾²⁾ , Masayuki Saimura ¹⁾ , Tsutomu Kodaki ¹⁾ , Takashi Morii ¹⁾²⁾ 1) Kyoto University, Institute of Advanced Energy, 2) CREST, JST
9:15-9:30		20-02 Liposome Membranes Enhance Self-Cleavage of Hammerhead Ribozyme with and without Magnesium (II) <u>Keishi Suga</u> , Seishiro Tanaka, Hiroshi Umakoshi Osaka University, Graduate School of Engineering Science, Division of Chemical Engineering
9:30-9:45	Oral Presentations Chair: Yukio Kitade Gifu University	20-03 Elucidation of a novel tmRNA function at the early stage of translation <u>Kota Sakane</u> , Asuteka Nagao, Tsutomu Suzuki Department of Chemistry and Biotechnology, School of Engineering, The University of Tokyo
9:45-10:00		20-04 Biogenesis of tRNA modification utilizing bicarbonate and implication for translational regulation by sensing cellular metabolite status <u>Tai Harada</u> , Kenjyo Miyauchi, Tsutomu Suzuki The University of Tokyo, Graduate School of Engineering, Department of Chemistry and Biotechnology
10:00-10:15	Break	
10:15-10:55	Invited Lecture Chair: Mitsuo Sekine Tokyo Institute of Technology	2L-01 The active site and evolutionary origin of the spliceosome <u>Kiyoshi Nagai</u> , Wojciech P Galej, Thi Hoang Duong Nguyen, Yasushi Kondo, Chris Oubridge, Jade Li, Andrew J. Newman MRC Laboratory of Molecular Biology, Francis Crick Avenue, Cambridge Biomedical Campus, Cambridge CB2 0QH, UK.
10:55-11:10	Oral Presentations Chair: Noriaki Minakawa The University of Tokushima	20-05 Rolling Circle Amplification in translation system <u>Hiroshi Abe</u> ¹⁾²⁾³⁾ , Naoko Abe ²⁾ , Michio Hiroshima ²⁾ , Hideto Maruyama ¹⁾²⁾ , Yuko Nakashima ²⁾ , Yukiko Nakano ²⁾ , Akira Matsuda ¹⁾ , Satoshi Shuto ²⁾ , Yasushi Sako ²⁾ , Yoshihiro Ito ²⁾ 1) Hokkaido University, Faculty of Pharmaceutical Sciences, 2) Nano Medical Engineering Laboratory, RIKEN Advanced Science Institute, 3) PRESTO, Japan Science and Technology Agency
11:10-11:25		20-06 Synthesis and Interaction Behavior of Peptide Ribonucleic Acid (PRNA)-PNA-DNA Chimeras and Application to Expression Control of Genetic Information <u>Takehiko Wada</u> ¹⁾ , Ryohei Uematsu ¹⁾ , Tatsuya Mizutani ¹⁾ , Yasuyuki Araki ¹⁾ , Seiji Sakamoto ¹⁾ , Junpei Ariyoshi ²⁾ , Asako Yamayoshi ²⁾ , Akira Murakami ²⁾ 1) IMRAM, Tohoku University, 2) Kyoto Institute of Technology, Graduate School of Science and Technology
11:25-11:40	Break	
11:40-12:20	Invited Lecture Chair: Shinsuke Sando Kyushu University	2L-02 Sequence Selective Recognition of Double-Stranded RNA Using Nucleobase and Backbone-Modified PNA <u>Eriks Rozners</u> Department of Chemistry, Binghamton University, SUNY, Binghamton, NY 13902, USA

12:20-12:35	Oral Presentations Chair: Fumi Nagatugi Tohoku University	20-07 Aptamer selection based on putative G-quadruplex sequence in genome <u>Kazunori Ikebukuro</u> ¹⁾²⁾ , Taiki Saito ¹⁾ , Wataru Yoshida ¹⁾²⁾ , Tomomi Yokoyama ¹⁾ , Kentaro Teramoto ¹⁾ 1) Department of Biotechnology and Life Science, Graduate school of Engineering, Tokyo University of Agriculture and Technology, 2) JST, CREST
12:35-12:50		20-08 Targeted mutagenesis with cell-penetrating zinc-finger nuclease proteins <u>Yoshio Kato</u> ¹⁾ , Carlos F. Barbas, III ²⁾ 1) National Institute of Advanced Industrial Science and Technology (AIST), Biomedical Research Institute, 2) The Scripps Research Institute, Departments of Molecular Biology and Chemistry
12:50-14:00	Break	
14:00-15:30	Poster Presentations (Even Numbers)	
15:30-15:45	Oral Presentations Chair: Hiroshi Sugiyama Kyoto University	20-09 Photoinduced charge transfer dynamics of perylenediimide assembly organized in DNA duplex <u>Tadao Takada</u> ¹⁾ , Akane Ashida ¹⁾ , Mitsunobu Nakamura ¹⁾ , Kiyohiko Kawai ²⁾ , Mamoru Fujitsuka ²⁾ , Tetsuro Majima ²⁾ , Kazushige Yamana ¹⁾ 1) University of Hyogo, Department of Materials Science and Chemistry, 2) Osaka University, The Institute of Scientific and Industrial Research (SANKEN)
15:45-16:00		20-10 Detection of Single-Nucleotide Variations by Monitoring the Blinking Triggered by Charge Separation in DNA <u>Kiyohiko Kawai</u> ¹⁾ , Tetsuro Majima ¹⁾ , Atsushi Maruyama ²⁾ 1) Osaka University, The Institute of Scientific and Industrial Research, 2) Tokyo Institute of Technology, Department of Biomolecular Engineering, Graduate School of Bioscience and Biotechnology
16:00-16:15		20-11 Synthesis of cyclic naphthalene diimide derivatives aiming at tetraplex DNA selective drug <u>Shigeori Takenaka</u> ¹⁾ , Md.Izabella Czerwinska ²⁾ , Md. Monirul Islam ¹⁾ , Shinobu Sato ¹⁾²⁾ , Satoshi Fujii ³⁾ 1) Kyushu Institute of Technology, Department of Applied Chemistry, 2) Kyushu Institute of Technology, Research Center for Bio-microsensing Technology, 3) Kyushu Institute of Technology, Department of Bioscience and Bioinformatics
16:15-16:55	Invited Lecture Chair: Hiroyuki Asanuma Nagoya University	2L-03 DNA Nanotags: Bright Fluorescent Labels Based on Intercalating Dyes and DNA Nanostructures <u>Bruce A. Armitage</u> Department of Chemistry and Center for Nucleic Acids Science and Technology, Carnegie Mellon University, 4400 Fifth Avenue, Pittsburgh, PA 15213 USA
16:55-17:10	Break	

List of Poster Presentations

Poster Presentations	Odd Numbers:	November 13 (Wed)	14:00-15:30
	Even Numbers:	November 14 (Thu)	14:00-15:30

- P001** Design and Synthesis of Nucleoside Phosphonate Constructed on a Branched-Tetrofuranose Skeleton
Yuichi Yoshimura, Y. B. Kiran, Hideaki Wakamatsu, Yoshihiro Natori, Hiroki Takahata
Tohoku Pharmaceutical University
- P002** Kinetic analysis of hydrolytic reaction of homo- and heterochiral RNA dimers including adenine and uracil bases.
Iroha Shibata, Yuki Nakatani, Atsushi Sato, Osamu Nakagawa, Shun-ichi Wada, Hidehito Urata
Osaka University of Pharmaceutical Sciences
- P003** Synthesis of O⁶-phosphoryl inosine derivatives by phosphitylation of carbonyl oxygen
Natsuhisa Oka, Yasuhiro Morita¹⁾, Yuta Itakura¹⁾, Kaori Ando¹⁾
Gifu University, Faculty of Engineering, Department of Chemistry and Biomolecular Science
- P004** Acyclic Nucleoside Bisphosphonates as Inhibitors of 6-Oxopurine Phosphoribosyltransferases
Dana Hocková¹⁾, Dianne T. Keough²⁾, Petr Špaček¹⁾, Zlatko Janeba¹⁾, Lieve Naesens³⁾, Michael D. Edstein⁴⁾, Marina Chavchich⁴⁾, Tzu-Hsuan Wang²⁾, John de Jersey²⁾, Luke W. Guddat²⁾
1) Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, 2) School of Chemistry and Molecular Biosciences, University of Queensland, QLD-4072, Brisbane, Australia, 3) Rega Institute for Medical Research, KU Leuven, B-3000, Belgium, 4) Australian Army Malaria Institute, Enoggera, QLD-4051, Brisbane, Australia
- P005** Synthesis and the property of a novel 2',4'-BNA with 2,6-dioxabicyclo[3.2.1]oct-3-ene skeleton
Takashi Osawa, Yoshiyuki Hari, Satoshi Obika
Graduate School of Pharmaceutical Sciences, Osaka University
- P006** Sequence specific Adenine modification of RNA by functionality- transfer ODN accelerated by metal cations
Ikuya Oshiro, Daichi Jitsuzaki, Atsusi Nishimoto, Kazumitsu Onizuka, Yosuke Taniguchi, Shigeki Sasaki
Kyushu University, Graduate School of Pharmaceutical Sciences
- P007** Syntheses and properties of nucleic acids having constrained pyranose as the sugar moiety
Kazuto Mori¹⁾, Tetsuya Kodama²⁾³⁾, Satoshi Obika¹⁾
1) Graduate School of Pharmaceutical Sciences, Osaka University, 2) Graduate School of Pharmaceutical Sciences, Nagoya University, 3) Structural Biology Research Center and Division of Biological Science, Graduate School of Science, Nagoya University
- P008** Synthesis of nucleosides possessing fluorescent group *via* nucleobase-exchange reaction of thymidine phosphorylase
Akihiko Hatano, Kouhei Kawabata, Masayuki Kurosu
Shibaura Institute of Technology, Department of Chemistry

- P009** Selenomethylene Locked Nucleic Acid (SeLNA) Bearing a Purine Base
Yoshihiro Moai¹⁾, Tetsuya Kodama¹⁾²⁾, Kunihiro Morihira³⁾⁴⁾, Hidekazu Hiroaki¹⁾²⁾⁵⁾, Satoshi Obika³⁾⁴⁾
 1) Graduate School of Pharmaceutical Sciences, Nagoya University, 2) Structural Biology Research Center and Division of Biological Science, Graduate School of Science, Nagoya University, 3) Graduate School of Pharmaceutical Sciences, Osaka University, 4) Laboratory of Biopharmaceutical Research, National Institute of Biomedical Innovation (NIBIO), 5) Cellular and Structural Physiology Institute (CeSPI), Nagoya University
- P010** Fluorescent “on-off” Switching under Hybridization of DNA and RNA with Dansyl-modified Oligonucleotides
Yoshio Suzuki¹⁾, Keiko Kowata²⁾, Yasuo Komatsu²⁾
 1) National Institute of Advanced Industrial Science and Technology, Biomedical Research Institute, 2) National Institute of Advanced Industrial Science and Technology, Bioproduction Research Institute
- P011** Synthesis and properties of functionalized dumbbell oligodeoxynucleotides by Cu(I) catalyzed alkyne-azide cycloaddition
Takuya Sunadome, Hideaki Ueno, Satoshi Ichikawa, Akira Matsuda
 Hokkaido University, Faculty of pharmaceutical Sciences
- P012** Chemical synthesis of U1 snRNA derivatives
Haruki Kobayashi, Akihiro Ohkubo, Makoto Suzuki, Takashi Kanamori, Yoshiaki Masaki, Kohji Seio, Mitsuo Sekine, Hideya Yuasa
 Tokyo Institute of Technology, Department of Life Science
- P013** Studies on Effects of Introduction of Phenylboronic Acids Derivatives upon Anti - Syn Orientation Control of Peptide Ribonucleic Acids (PRNA) toward Cancer Cell Specific Oligonucleotide Therapeutics
Ryohei Uematsu¹⁾, Tatsuya Mizutani¹⁾, Yasuyuki Araki¹⁾, Seiji Sakamoto¹⁾, Junpei Ariyoshi²⁾, Asako Yamayoshi²⁾, Akira Murakami²⁾, Takehiko Wada¹⁾
 1) Tohoku University, Institute of Multidisciplinary Research for Advanced Materials, 2) Kyoto Institute of Technology, Graduate School of Science and Technology
- P014** Synthesis and evaluation of GFP-inspired nucleosides for photoregulation of DNA duplex formation
Yuya Sakata, Taichiro Arai, Isao Yamamoto, Asako Yamayoshi, Akira Murakami, Akio Kobori
 Kyoto Institute of Technology, Department of Biomolecular Engineering
- P015** Effect of pseudo-pyrimidine bases on peptide nucleic acid duplex formation stability
Kenji Takagi, Kunihiro Kaihatsu, Zhou Yiting, Nobuo Kato
 The Institute of Scientific and Industrial Research
- P016** Development of the Oxidation Induced Cross-link Reaction
Shuhei Kusano¹⁾, Takuya Haruyama¹⁾, Nao Iwamoto¹⁾, Shinya Hagihara²⁾, Fumi Nagatsugi¹⁾
 1) Tohoku University, IMRAM, 2) Nagoya University, WPI-ITbM
- P017** ODN containing functionalized thioguanosine: Useful tools for selective guanosine RNA targeting.
Jan Bárta, Daichi Jitsuzaki, Yosuke Taniguchi, Shigeki Sasaki
 Kyushu University - Bioorganic and Synthetic Chemistry
- P018** SYNTHESIS OF ACYCLIC AND MACROCYCLIC URACIL OLIGOMERS - OLIGONUCLEOTIDE ANALOGUES
Anton Nikolaev, Vyacheslav Semenov, Liliya Saifina, Vladimir Reznik
 A.E. Arbusov Institute of Organic and Physical Chemistry

- P118** Electrochemical DNA detection based on the combination of ferrocenylnaphthalene diimide with β -cyclodextrin
Shinobu Sato¹⁾²⁾, Hirotomo Takenaka¹⁾, Shigeori Takenaka¹⁾²⁾
 1) Kyushu Institute of Technology, Department of Applied Chemistry, 2) Kyushu Institute of Technology, Research Center for Bio-microsensing Technology
- P119** Development of Quencher-Free Dumbbell-Form Molecular Beacon Probe Having the Silylated Pyrene
Tomohisa Moriguchi, Noriko Takayama, Shinji Watanabe, Nozomi Kanazawa, Kazuo Shinozuka
 Gunma University, Faculty of Science and Technolog
- P120** Development and application of Cancer detection by electrochemical telomerase assay (ECTA)
Yuki Hori¹⁾, Naohiro Fujimoto²⁾, Tetsurou Matsumoto²⁾, Shinobu Sato¹⁾³⁾, Shigeori Takenaka¹⁾³⁾
 1) Kyushu Institute of Technology, Department of Applied Chemistry, 2) University of Occupational and Environmental Health, 3) Kyushu Institute of Technology, Research Center for Bio-microsensing Technology
- P121** Physical properties of 2D-DNA-nanostructures on lipid bilayer membrane
Shingo Makishi¹⁾, Tomonori Shibata¹⁾, Koichi Matsuzaki¹⁾, Sonia A. Contera³⁾⁴⁾, Chikara Dohno¹⁾²⁾, Kazuhiko Nakatani¹⁾
 1) The Institute of Scientific and Industrial Research (ISIR), Osaka University, 2) PRESTO, JST, 3) University of Oxford, Physics Department, 4) Oxford Martin School
- P122** Site-specific covalent modification of DNA origami by functional proteins
Eiji Nakata¹⁾²⁾, Huyen Thi Thu Dinh¹⁾, Tien Anh Ngo¹⁾, Masayuki Saimura¹⁾, Takashi Morii¹⁾²⁾
 1) Kyoto University, Institute of Advanced Energy, 2) CREST, JST
- P123** Sugar bearing diblock copolymers for targeted nucleic acids delivery to the liver
Maria Chiara Munisso¹⁾, Satoshi Obika²⁾, Tetsuji Yamaoka¹⁾
 1) Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute, 2) Graduate School of Pharmaceutical Science, Osaka University, Suita, Osaka 565-0871, Japan.
- P124** Aggregation of diketopyrrolopyrrole derivative using DNA
Koji Tsuto, Mitsunobu Nakamura, Tadao Takada, Kazushige Yamana
 University of Hyogo
- P125** Programmed DNA nanostructures: photocontrollable assembly to construct pre-designed multidirectional patterns
Yangyang Yang¹⁾, Masayuki Endo²⁾, Yuki Suzuki¹⁾, Kumi Hidaka¹⁾, Hiroshi Sugiyama¹⁾²⁾
 1) Kyoto University, Graduate School of Science, 2) Institute for Integrated Cell-Material Sciences, Kyoto University
- P126** Wrapping DNA origami with DNA Sudare
Masafumi Kaino¹⁾, Shinya Minamida¹⁾, Mirai Hashizume¹⁾, Akinori Kuzuya¹⁾²⁾, Yuichi Ohya¹⁾
 1) Kansai University, Department of Chemistry and Materials Engineering, 2) PRESTO, JST
- P127** Dynamic assembly/disassembly processes of photo-responsive DNA origami nanostructures captured by high-speed atomic force microscopy
Yuki Suzuki¹⁾³⁾, Masayuki Endo²⁾³⁾, Yangyang Yang¹⁾, Hiroshi Sugiyama¹⁾²⁾³⁾
 1) Kyoto University, Graduate School of Science, 2) Institute for Integrated Cell-Material Science (WPI-iCeMS), 3) CREST Japan Science and Technology Corporation (JST)

- P128** Gene delivery system responding to small G protein kinase activated by G protein-coupled receptors
Jeong-Hun Kang¹⁾, Akira Tsuchiya²⁾, Daisuke Asai³⁾
 1) National Cerebral and Cardiovascular Center Research Institute, Department of Biomedical Engineering,
 2) Kyushu University, Inamori Frontier Research Center, Division of science and technology for soft materials,
 3) St. Marianna University School of Medicine, Department of Microbiology
- P129** Novel DNA origami tubular structures with variable arrangements
Seigi Yamamoto¹⁾, Masayuki Endo²⁾³⁾, Tomoko Emura¹⁾, Kumi Hidaka¹⁾, Hiroshi Sugiyama¹⁾²⁾³⁾
 1) Kyoto University, Graduate School of Science, 2) Institute of Integrated Cell-Material Science (WPI-iCeMS),
 3) CREST Japan Science and Technology Corporation (JST)
- P130** DNA Terminal Breathing Regulated by Metal Ions for Colloidal Logic Gates
Naoki Kanayama, Tohru Takarada, Masahiro Fujita, Mizuo Maeda
 RIKEN, Bioengineering Laboratory
- P131** Binding of Ag(I) ions by cytosine-cytosine pairs in DNA duplexes
Masato Sugimoto, Hisao Saneyoshi, Itaru Okamoto, Akira Ono
 Kanagawa University, Department of Material and Life Chemistry
- P132** Fine-tuning of the orientation and positioning of L7Ae RNA-binding protein on the triangular RNA
Shoji J. Ohuchi¹⁾, Fumihiko Sagawa¹⁾, Taiichi Sakamoto²⁾, Tan Inoue¹⁾
 1) Kyoto University, Graduate School of Biostudies, 2) Chiba Institute of Technology, Faculty of Engineering
- P133** Metal ion binding by modified pyrimidine pairs in DNA duplexes
Yuki Ando, Hisao Saneyoshi, Itaru Okamoto, Akira Ono
 Kanagawa University, Department of Material and Life Chemistry
- P134** Synthesis of Tandem Hairpin Pyrrole-Imidazole Polyamide for Human Telomeric DNA
Yusuke Kawamoto¹⁾, Toshikazu Bando¹⁾, Fukumi Kamada²⁾, Kaori Hashiya¹⁾, Yue Li¹⁾,
 Kazuhiro Maeshima²⁾³⁾, Hiroshi Sugiyama¹⁾⁴⁾⁵⁾
 1) Kyoto University, Graduate School of Science, Department of Chemistry, 2) National Institute of Genetics, Structural Biology Center, Biological Macromolecules Laboratory, 3) Graduate University for Advanced Studies (Sokendai), School of Life Science, Department of Genetics, 4) Kyoto University, Institute for Integrated Cell-Material Science (WPI-iCeMS), 5) Japan Science and Technology Corporation (JST), Core Research for Evolutional Science and Technology (CREST)
- P135** Synthetic study of modified oligonucleotides containing 5-aminopyrimidine nucleosides
Shion Tanisaki, Itaru Okamoto, Hisao Saneyoshi, Akira Ono
 Kanagawa University, Department of Material and Life Chemistry
- P136** DNA strand exchange stimulated by vinylcarbazole mediated photocrosslinking
Hirokazu Hashimoto¹⁾, Shigetaka Nakamura¹⁾, Satoshi Kobayashi²⁾, Kenzo Fujimoto¹⁾³⁾
 1) School of Materials Science, Japan Advanced Institute of Science and Technology, 2) Department of Computer Science, University of Electro-Communications, 3) Research Center for Bio-Architecture, Japan Advanced Institute of Science and Technology