

Program

Day 1: November 7 (Wed)

9:55-10:00	Opening Remarks	
10:00-10:15	Oral Presentations Chair: Noriaki Minakawa Tokushima Univ.	10-01 Development of 2'- β Seleno Nucleoside Analogs as Irreversible Inhibitors for Viral Polymerases <u>Yasuaki Kimura</u> ¹⁾ , Yushi Niimi ¹⁾ , Hideo Katakura ¹⁾ , Fumiaki Tomoike ²⁾ , Tetsuro Suzuki ³⁾ , Tsutomu Murakami ⁴⁾ , Eiichi Kodama ⁵⁾ , Hiroshi Abe ¹⁾⁶⁾ 1) Department of Chemistry, Graduate School of Science, Nagoya University, 2) Research Center for Materials Science, Nagoya University, 3) Department of Virology and Parasitology, Hamamatsu University School of Medicine, 4) AIDS Research Center Laboratory III, National Infectious Diseases, 5) Division of Infectious Diseases, International Research Institute of Disaster Science, Tohoku University, 6) JST CREST "Large-Scale Genome Synthesis and Cell Programming"
10:15-10:30		10-02 Synthesis of cell-membrane permeable oligonucleotides bearing GSH-activated protecting groups on the inter-nucleotide linkages <u>Hisao Saneyoshi</u> , Takayuki Ohta, Yuki Hiyoshi, Akira Ono Department of Material and Life Chemistry, Faculty of Engineering, Kanagawa University
10:30-10:45		10-03 Remarkable Enhancement of RNaseH Cleavage Activities of RNA Complexed with Peptide Ribonucleic Acid (PRNA) - Novel Backbone Modification Strategy for Nuclease Cleavage Activity Improvements - Masahito Inagaki ¹⁾ , Daisuke Unabara ¹⁾ , Hiroka Sugai ¹⁾ , Yasuyuki Araki ¹⁾ , Masaki Nishijima ¹⁾ , Satoru Ishibashi ²⁾ , Takanori Yokota ²⁾ , Asako Yamayoshi ³⁾ , Kazuhiko Nakatani ⁴⁾ , <u>Takehiko Wada</u> ¹⁾ 1) IMRAM, Tohoku University, 2) Department of Neurology and Neurological Science, Tokyo Medical and Dental University, 3) Graduate School of Biomedical Sciences, Nagasaki University, 4) The Institute of Scientific and Industrial Research, Osaka University
10:45-11:00	Oral Presentations Chair: Akira Ono Kanagawa Univ.	10-04 N-(Alkanesulfonyl) -Phosphoramidate Oligonucleotides as Potential Antisense Agents <u>Dmitry Stetsenko</u> ¹⁾²⁾ , Ekaterina Burakova ¹⁾ , Boris Chelobanov ¹⁾²⁾ , Alesya Fokina ¹⁾ , Olga Patutina ¹⁾ , Svetlana Miroschnichenko ¹⁾ , Masayuki Fujii ³⁾ , Marina Zenkova ¹⁾ 1) Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, 2) Novosibirsk State University, Novosibirsk, Russia, 3) Kindai University, Fukuoka, Japan
11:00-11:15		10-05 From Stereopurity to Precision Medicine: Optimizing the Properties of Antisense Nucleic Acid Therapeutics <u>Pachamuthu Kandasamy</u> , Gopal Bommineni, Michael Byrne, Ann Durbin, Naoki Iwamoto, Jayakanthan Kumarasamy, Fangjun Liu, Yuanjing Liu, Juili Shelke, Mamoru Shimizu, Chikdu Shivalila, Stephany Standley, Snehlata Tripathi, Hailin Yang, Yuan Yin, Jason Zhang, Zhong Zhong, Chandra Vargeese Wave Life Sciences
11:15-11:35	Break	
11:35-12:15	Invited Lecture Chair: Hiroshi Sugiyama Kyoto Univ.	IL-01 Visualization of DNA Sequences with TAMRA-polypyrrole Seonghyun Lee ¹⁾ , Yusuke Kawamoto ²⁾ , Hiroshi Sugiyama ²⁾ , <u>Kyubong Jo</u> ¹⁾ 1) Department of Chemistry, Sogang University, 2) Department of Chemistry, Graduate School of Science, Kyoto University

12:15-13:15	Lunch Break	
13:15-14:45	Poster Presentations (Odd Numbers)	
14:45-15:00	Oral Presentations Chair: Takeshi Wada Tokyo Univ. of Science	10-06 8-position modified 2'-deoxyguanosine derivatives for studying non-B DNA structures <u>Hongliang Bao</u> , Takumi Ishizuka, Yan Xu Division of Chemistry, Department of Medical Sciences, Faculty of Medicine, University of Miyazaki
15:00-15:15		10-07 Hexaplex formation by artificial nucleic acid tethering bifacial nucleobases <u>Hiromu Kashida</u> ¹⁾ , Yuhei Hattori ¹⁾ , Kentaro Ishii ²⁾ , Susumu Uchiyama ²⁾ , Hiroyuki Asanuma ¹⁾ 1) Department of Biomolecular Engineering, Graduate School of Engineering, Nagoya University, 2) ExCELLS, National Institutes of Natural Sciences
15:15-15:30		10-08 RNA aptamers targeting the toxic oligomer of A β 42 and their application to histochemistry <u>Kazuma Murakami</u> ¹⁾ , Yayoi Obata ¹⁾ , Asa Sekikawa ¹⁾ , Haruka Ueda ¹⁾ , Naotaka Izuo ²⁾ , Tatsuya Awano ³⁾ , Keiji Takabe ³⁾ , Takahiko Shimizu ²⁾ , Kazuhiro Irie ¹⁾ 1) Division of Food Science and Biotechnology, Graduate School of Agriculture, Kyoto University, 2) Department of Advanced Aging Medicine, Graduate School of Medicine, Chiba University, 3) Division of Forest and Biomaterials Science, Graduate School of Agriculture, Kyoto University
15:30-15:45	Oral Presentations Chair: Hiroyuki Asanuma Nagoya Univ.	10-09 Cyclic naphthalene diimide for tetraplex DNA recognition and its application of cancer therapy <u>Tingting Zou</u> ¹⁾²⁾ , Ryusuke Takeuchi ¹⁾ , Daiki Wakahara ¹⁾ , Shinobu Sato ¹⁾²⁾ , Shigeori Takenaka ¹⁾²⁾ 1) Department of Applied Chemistry, Kyushu Institute of Technology, 2) Research Center for Bio-microsensing Technology, Kyushu Institute of Technology
15:45-16:00		10-10 Recognition of DNA GGGGCC repeats by novel naphthyridine tetramer <u>Yihuan Lu</u> , Chikara Dohno, Kazuhiko Nakatani The Institute of Scientific and Industrial Research, Osaka University
16:00-16:15		10-11 Structure-based design of a eukaryote-selective aminoglycoside <u>Hiroki Kanazawa</u> ¹⁾ , Oscar M. Saavedra ²⁾ , Juan Pablo Mianti ²⁾ , Simon A. Young ³⁾ , Luis Izquierdo ⁴⁾ , Terry K. Smith ³⁾ , Stephen Hanessian ²⁾ , Jiro Kondo ¹⁾ 1) Faculty of Science and Technology, Sophia University, 2) Department of Chemistry, Université de Montréal, 3) Biomedical Sciences Research Complex, University of St. Andrews, 4) ISGlobal, Hospital-Clinic-Universitat de Barcelona
16:15-16:35	Break	
16:35-17:15	Invited Lecture Chair: Akimitsu Okamoto Univ. of Tokyo	IL-02 DNA structures in nanoconfinement <u>Hanbin Mao</u> Professor, Department of Chemistry & Biochemistry and School of Biomedical Sciences, Kent State University

17:15-17:30	Oral Presentations Chair: Fumi Nagatsugi Tohoku Univ.	10-12 1D-Oligomerization of a biparticle ribozyme rescues its mutations that disturb the assembly of the catalytic core <u>Yoshiya Ikawa</u> ¹⁾²⁾ , Md. Motiar Rahman ²⁾ , Shigeyoshi Matsumura ¹⁾ 1) Graduate School of Science & Engineering, University of Toyama, 2) Graduate School of Innovative Life Science, University of Toyama
17:30-17:45		10-13 Functional and Structural Insights into the Translesion Synthesis across <i>N</i> ² -dG Damaged DNAs <u>P.I. Pradeepkumar</u> ¹⁾ , Pratibha P Ghodke ¹⁾ , Praneeth Bhommisetti ¹⁾ , Deepak T Nair ²⁾ 1) Department of Chemistry, 2) UNESCO-Regional Center for Biotechnology, New Delhi-121001
17:45-18:00		10-14 Phase separation of repeated RNA with amyloid-like protein in neurodegenerative diseases is promoted by RNA G-quadruplexes <u>Ye Teng</u> ¹⁾ , Hisae Tateishi-Karimata ¹⁾ , Naoki Sugimoto ¹⁾²⁾ 1) Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, 2) Graduate School of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University
18:00-18:15	Oral Presentations Chair: Asako Yamayoshi Nagasaki Univ.	10-15 Development of small molecular G-clamp derivatives binding to RNA higher-order structure <u>Hiroataka Murase</u> , Fumi Nagatsugi Institute of Multidisciplinary Research for Advanced Materials, Tohoku University
18:15-18:30		10-16 Preparation of acetylene-tagged oligonucleotides and their structural analysis by Raman spectra <u>Kazuhito Tanabe</u> , Ryota Itaya, Wakana Idei, Ryohsuke Kurihara Department of Chemistry and Biological Science, College of Science and Engineering, Aoyama Gakuin University

Day 2: November 8 (Thu)

9:20-9:35	Oral Presentations Chair: Atsushi Maruyama Tokyo Inst. of Tech.	20-01 Mutational analysis and improvement of Baby Spinach focusing on its G-quadruplex structure <u>Kinuko Ueno</u> ¹⁾ , Kaori Tsukakoshi ¹⁾ , Alessandro Porchetta ²⁾ , Francesco Ricci ²⁾ , Kazunori Ikebukuro ¹⁾ 1) Department of Biotechnology and Life Science, Graduate School of Engineering, Tokyo University of Agriculture and Technology, 2) Department of Chemical Sciences and Technologies, University of Rome Tor Vergata
9:35-9:50		20-02 Structural Perspectives of the DNA binding properties of Ruthenium Polypyridyl Complexes <u>Kane McQuaid</u> ¹⁾³⁾ , James Hall ²⁾³⁾ , Holly Abell ¹⁾ , Shuntaro Takahashi ⁴⁾ , Naoki Sugimoto ⁴⁾ , David Allan ³⁾ , David Cardin ¹⁾ , John Brazier ³⁾ , Christine Cardin ¹⁾ 1) Department of Chemistry, University of Reading, UK, 2) Diamond Light Source Ltd., Harwell, Berkshire, UK, 3) Department of Pharmacy, University of Reading, Berkshire, UK, 4) Frontier Institute for Biomolecular Engineering Research (FIBER), Kobe, Japan.
9:50-10:05	Oral Presentations Chair: Hidetaka Torigoe Tokyo Univ. of Science	20-03 Antiparallel G-quadruplex formed by human telomere RNA <u>Chao-Da Xiao</u> ¹⁾ , Xiangchun Shen ²⁾ , Yan Xu ³⁾ 1) State Key Laboratory of Functions and Applications of Medicinal Plants, School of Pharmaceutical Sciences, Guizhou Medical University, 2) The Key Lab of Optimal Utilization of Natural Medicine Resources, School of Pharmaceutical Sciences, Guizhou Medical University, 3) Division of Chemistry, Department of Medical Sciences, Faculty of Medicine, University of Miyazaki
10:05-10:20		20-04 Modulating diffusion speed of DNA by toehold exchange <u>Ibuki Kawamata</u> ¹⁾ , Thanapop Rodjanapanyakul ¹⁾ , Fumi Takabatake ²⁾ , Keita Abe ¹⁾ , Shinichiro M. Nomura ¹⁾ , Satoshi Murata ¹⁾ 1) Department of Robotics, School of Engineering, Tohoku University, 2) High Energy Accelerator Research Organization
10:20-10:40	Break	
10:40-11:20	Invited Lecture Chair: Naoki Sugimoto Konan Univ.	IL-03 The RNA nanomachines of gene expression dissected at the single molecule level <u>Nils G. Walter</u> Professor, Single Molecule Analysis Group, Department of Chemistry, University of Michigan
11:20-11:35	Oral Presentations Chair: Kohji Seio Tokyo Inst. of Tech.	20-05 In-cell NMR studies on structure and dynamics of DNA and RNA introduced inside the living human cells <u>Yudai Yamaoki</u> ¹⁾ , Takashi Nagata ¹⁾²⁾ , Ayaka Kiyoshi ²⁾ , Masayuki Miyake ²⁾ , Kuan-Heng Lin ²⁾ , Shohei Takami ²⁾ , Fumi Kano ³⁾ , Masayuki Murata ³⁾⁴⁾ , Masato Katahira ¹⁾²⁾ 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
11:35-11:50		20-06 Chemical modifications of aminopyridine unit of 2'-deoxyaminopyridinyl-pseudocytidine to tune the recognition ability for the formation of the triplex DNA with CG inversion sites <u>Lei Wang</u> , Yosuke Taniguchi, Hidenori Okamura, Shigeki Sasaki Graduate School of Pharmaceutical Sciences, Kyushu University
11:50-12:05		20-07 Development of an Immune Cell-Targeted Nanostructured DNA for CpG ODN Delivery by Mannose Modification <u>Wenqing Liao</u> ¹⁾²⁾ , Sakiko Akahira ²⁾ , Kosuke Kusamori ²⁾ , Rintaro Hara ²⁾³⁾ , Takeshi Wada ²⁾ , Yuki Takahashi ¹⁾ , Yoshinobu Takakura ¹⁾ , Makiya Nishikawa ²⁾ 1) Graduate School of Pharmaceutical Sciences, Kyoto University, 2) Graduate School of Pharmaceutical Sciences, Tokyo University of Science, 3) Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University

12:05-13:05	Lunch Break	
13:05-14:35	Poster Presentations (Even Numbers)	
14:35-14:50	Oral Presentations Chair: Takehiko Wada Tohoku Univ.	20-08 Coulomb and CH- π interaction in (6-4) photolyase-DNA complex dominate DNA binding and repair abilities <u>Yuma Terai</u> ¹⁾ , Ryuma Sato ²⁾ , Takahiro Yumiba ¹⁾ , Ryuhei Harada ²⁾ , Kohei Shimizu ¹⁾ , Shigenori Iwai ¹⁾ , Yasuteru Shigeta ²⁾ , Junpei Yamamoto ¹⁾ 1) Division of Chemistry, Graduate School of Engineering Science, Osaka University, 2) Center for Computational Sciences, University of Tsukuba
14:50-15:05		20-09 Development of a novel gene expression control strategy which is able to eliminate off-target effect <u>Yousuke Katsuda</u> ¹⁾ , Shin-ichi Sato ²⁾ , Takuto Kamura ¹⁾ , Yusuke Kitamura ¹⁾ , Masaki Hagihara ³⁾ , Toshihiro Ihara ¹⁾ 1) Faculty of Advanced Science and Technology Kumamoto University, 2) Institute for Chemical Research, Kyoto University, 3) Graduate School of Science and Technology, Hirosaki University
15:05-15:20		20-10 Photo-triggered double duplex invasion DNA using ultrafast photo-cross-linker <u>Shigetaka Nakamura</u> , Hayato Kawabata, Daisuke Maeda, Kenzo Fujimoto Department of Advanced Science and Technology, JAIST
15:20-15:35	Oral Presentations Chair: Toshihiro Ihara Kumamoto Univ.	20-11 Synthesis and properties of triplex-forming oligonucleotides containing modified sugar moieties and nucleobases <u>Shuhei Nishizawa</u> ¹⁾ , Tatsuya Ohnishi ¹⁾ , Lintaro Watanabe ¹⁾ , Takashi Kanamori ¹⁾ , Hideya Yuasa ¹⁾ , Akihiro Ohkubo ¹⁾²⁾ 1) Department of Life Science and Technology, School of Life Science and Technology, Tokyo institute of technology, 2) CREST, Japan Science and Technology Agency (JST)
15:35-15:50		20-12 Encapsulation of Long DNA into Polyelectrolyte Capsules <u>Anatoly Zinchenko</u> , Eisuke Inagaki, Shizuaki Murata Graduate School of Environmental Studies, Nagoya University
15:50-16:05		20-13 Metabolic labeling and intercalation-directed "click" crosslinking of DNA <u>Masayuki Tera</u> ¹⁾²⁾ , Nathan W. Luedtke ¹⁾ 1) Department of Chemistry, University of Zurich, 2) Suntory Foundation for Life Sciences
16:05-16:25	Break	
16:25-17:25	JSNAC General Meeting	
17:25-17:55	Special Lecture Chair: Shigeki Sasaki Kyushu Univ.	SL-01 Development of oligonucleotides having nuclease resistance properties <u>Akira Matsuda</u> Faculty of Pharmaceutical Sciences, Center for Research & Education on Drug Discovery, Hokkaido University, Sapporo, Japan
17:55-18:25		SL-02 My Study Life in Oligonucleotide Synthesis <u>Mitsuo Sekine</u> Kankyo Resilience Co., Ltd
18:30-20:30	Exchange Meeting	International Conference Hall

Day 3: November 9 (Fri)

9:20-9:35	Oral Presentations Chair: Shigeori Takenaka Kyushu Inst. of Tech.	30-01 Chemo-enzymatic click labeling and direct sequencing of epigenetic DNA marks using TOP-seq <u>Saulius Klimašauskas</u> , Zdislav Staševskij, Povilas Gibas, Juozas Gordevičius, Edita Kriukienė Institute of Biotechnology, Life Sciences Center, Vilnius University
9:35-9:50		30-02 Single-molecule monitoring of structural switching dynamics of preQ1 riboswitch <u>Kiyohiko Kawai</u> ¹⁾ , Takafumi Miyata ²⁾ , Naohiko Shimada ²⁾ , Syoji Ito ³⁾ , Hiroshi Miyasaka ³⁾ , Atsushi Maruyama ²⁾ 1) The Institute of Scientific and Industrial Research (SANKEN), Osaka University, 2) Department of Life Science and Technology, Tokyo Institute of Technology, 3) Graduate School of Engineering Science, Osaka University
9:50-10:05	Oral Presentations Chair: Ryosuke Ueki Univ. of Tokyo	30-03 Chaperoning of the allosteric nucleic acid enzymes with cationic copolymers Orakan Hanpanich, Naohiko Shimada, <u>Atsushi Maruyama</u> Department of Life Science and Technology, Tokyo Institute of Technology
10:05-10:20		30-04 Metal-mediated base pairs; the modification of DNA for future nano-electronics <u>Vladimír Sychrovský</u> ¹⁾ , Jakub Šebera ¹⁾ , Yoshiyuki Tanaka ²⁾³⁾ , Akira Ono ⁴⁾ , Jiří Fukal ¹⁾ , Magdalena Hromadová ⁵⁾ , Viliam Kolivoška ⁵⁾ 1) Institute of Organic Chemistry and Biochemistry of the CAS, Czech Republic, 2) Faculty of Pharmaceutical Sciences, Tokushima Bunri University, Japan, 3) Graduate School of Pharmaceutical Sciences, Tohoku University, Japan, 4) Department of Material & Life Chemistry, Kanagawa University, Japan, 5) J. Heyrovský Institute of Physical Chemistry of the CAS, Czech Republic
10:20-10:40	Break	
10:40-11:20	Invited Lecture Chair: Takashi Morii Kyoto Univ.	IL-04 Lipid-oligonucleotide conjugates forming G-Quadruplex as broad inhibitors of enveloped Viruses <u>Sébastien Lyonnais</u> ¹⁾ , Santiago Grijalvo ²⁾ , George Koutsoudakis ³⁾ , Andreas Meyherhans ⁴⁾ , Juana Díez ³⁾ , Gilles Mirambeau ⁶⁾ , Ramon Eritja ²⁾ 1) CEMIPAI, Université de Montpellier-CNRS UMS3725, 34293 Montpellier, France, 2) IQAC-CSIC, CIBER-BBN, 08034 Barcelona, Spain, 3) IDIBAPS · Division of Liver, Digestive System and Metabolism, Viral Hepatitis, Barcelona, Spain, 4) Molecular Virology Group and 5) Infection Biology Group, Universitat Pompeu Fabra, Barcelona, Spain, 6) Sorbonne Université, Faculté des Sciences et Ingénierie, UFR 927 des Sciences de la Vie, Paris, France
11:20-11:35	Oral Presentations Chair: Masayuki Endo Kyoto Univ.	30-05 Single-Molecule and Real-Time Observation of Cyclodextrin-Rotaxane Incorporated into DNA Origami with Nanocavities <u>Akinori Kuzuya</u> ¹⁾²⁾ , Naohide Akamatsu ¹⁾ , Mana Ishino ¹⁾ , Hitomi Okuyama ¹⁾ , Fumito Baba ¹⁾ , Yuichi Ohya ¹⁾²⁾ 1) Department of Chemistry and Materials Engineering, Kansai University, 2) Collaborative Research Center of Engineering, Medicine, and Pharmacology, ORDIST, Kansai University
11:35-11:50		30-06 Self-assembly of Dendritic DNA into Nanohydrogel for delivery of multimoduls therapeutics Bella Rosa Liyarita, <u>Fangwei Shao</u> Division of Chemistry and Biological Chemistry, Nanyang Technological University

11:50-12:05	Oral Presentations Chair: Hirohide Saito Kyoto Univ.	30-07 Thermodynamic Properties of the Specific Binding of 4-Thiothymine to Each of Thymine and Cytosine in Mismatched Duplex DNA by Different Metal Ions Ayami Yaguchi ¹⁾ , Akira Ono ²⁾ , Jiro Kondo ³⁾ , <u>Hidetaka Torigoe</u> ¹⁾ 1) Department of Applied Chemistry, Faculty of Science, Tokyo University of Science, 2) Department of Material & Life Chemistry, Faculty of Engineering, Kanagawa University, 3) Department of Materials and Life Sciences, Faculty of Science and Technology, Sophia University
12:05-12:20		30-08 DNA Binding Adaptors for Locating Multiple Enzymes on DNA scaffold <u>Eiji Nakata</u> , Thang Minh Nguyen, Zhengxiao Zhang, Huyen Dinh, Peng Lin, Masayuki Saimura, Takashi Morii Institute of Advanced Energy, Kyoto University
12:20-12:30	Closing Remarks	