PROGRAM

Sat, August 26th

Afternoon Registration desk for the guests at the hotel (Atrium)

Sun, August 27th

13:00- Registration (Atrium)

15:20-15:30 (Main Room) Opening address Yasuo Suzuki
15:30-18:00 (Main Room) Plenary lectures

PL-1 15:30-16:20 **Carbohydrate-Carbohydrate Interaction in Basic Cell Biology**
Sen-itiroh Hakomori, *USA*
Chairman: Yoshio Hirabayashi, *Japan*

PL-2 16:20-17:10 **H1 Haemagglutinin Receptor Binding**
*John Skehel, Rupert Russell and Steve Gamblin, *UK*
Chairman: Yasuo Suzuki, *Japan*

17:10-17:30 Coffee Break

PL-3 17:30-18:20 **Synthesis of Tamiflu through New Asymmetric Catalysis**
Masakatsu Shibasaki, *Japan*
Chairman: Makoto Kiso, *Japan*

18:20-18:45 (Main Room) Special Lecture

SL **My Study on Sialic Acids**
Tamio Yamakawa, *Japan*
Chairman: Akemi Suzuki, *Japan*

19:00-21:00 Reception (Banquet Room)

21:00-22:30 Bar (Bar Lounge)

Mon, August 28th

7:30-8:30 Breakfast (Dining Room)

8:45-11:51 Session 1: Viral and Bacterial Infection (Main Room)
Discussion leaders: Harold J. Jennings, *Canada*; Yasuo Suzuki, *Japan*

KNL-1-1 8:45-9:10 **Going for Baroque: the Mechanisms of Polysialic Acid O-Acetylation and de-O-Esterification of Monomeric Sialic Acid in *Escherichia coli* K1**
*Eric R. Vimr, Susan M. Steenbergen, and Michael R. King, *USA*

IL-1-1 9:10-9:35 **Glycan Microarray Analysis of Human and Avian Influenza Virus Receptor Specificity**
James Stevens, Ola Blixt, *James C. Paulson, and Ian A. Wilson, *USA*

KNL-1-2 9:35-10:00 **Structural Studies on Sialidases from *Streptococcus pneumoniae* and *Clostridium perfringens***
*Garry Taylor, Guogang Xu, Simon Newstead, Jane Potter, Helen Connaris, Rupert Russell, and Peter Andrew, *UK*

IL-1-2 10:00-10:15 **Highly Pathogenic Avian Influenza Virus and Importance of Its Receptor Binding Surveillance**
Yasuo Suzuki, *Japan*

10:15-10:30 Coffee Break (15 min)

IL-1-3 10:30-10:45 **Structural Investigation of the Carbohydrate-Binding Domain VP8*, Critical to Rotavirus Host-Cell Recognition: Strains CRW-8, RRV and Wa That Infect Pig, Monkey and Human**
H. Blanchard*, X. Yu., M.J. Kraschnefski, S.A. Scott, and M. von Itzstein, *Australia*

OP-1-1 10:45-10:56 **Sialidase Activity of Influenza A Virus in an Endocytic Pathway Enhances Viral Replication**
Takashi Suzuki, *Japan*

OP-1-2 10:56-11:07 **Coliphage Derived Sialidase Preferentially Recognizes Non-Reducing End of Polysialic Acid**
*Katsuhide Miyake, Yohei Kataoka, and Shinji Iijima, *Japan*

OP-1-3 11:07-11:18 **The Prodigious Catalytic Activity of the Sialidase from *Micromonospora viridifaciens***
A.J. Bennet*, J.N. Watson, A.A. Narine, and C. Chen, *Canada*

OP-1-4 11:18-11:29 **Ab Initio Molecular Orbital Study of Influenza A Virus Hemagglutinin-Sialosaccharide Interaction**
Toshihiko Sawada, *Japan*

OP-1-5 11:29-11:40 **Structural Basis for the Inhibition of Human Cytosolic Sialidase Neu2 by Influenza Virus Drugs**
Chavas L.M.G., Kato R.*, Mann M.C., Thomson R.J., Dyason J.C., von Itzstein M., McKimm-Breschkin J., Colman P.M., Fusi P., Venerando B., Tettamanti G., Monti E., and Wakatsuki S., *Japan*

OP-1-6 11:40-11:51 **Siglec-9 Inhibits Innate Immunity**
*Ken-ichi Nishijima, Munetoshi Ando, Takeshi Hashimoto, and Shinji Iijima, *Japan*

12:00-12:45 Lunch (Dining Room)

12:45-13:45 Luncheon Seminar Provided by Wako Chemicals (Main Room)

14:00-16:00 Session 2: Sialidases and their Biological Role (Main Room)
Discussion leaders: Roland Schauer, *Germany*; Guido Tettamanti, *Italy*

IL-2-1 14:00-14:20 **Identification and Characterization of Sialidases from Zebrafish (*Danio rerio*)**
Marta Manzoni, Paolo Colombi, Luana Rubaga, Nadia Papini, Natascia Tiso, Bruno Venerando, Guido Tettamanti, Roberto Bresciani, Augusto Preti, Francesco Argenton, Giuseppe Borsani and *Eugenio Monti, *Italy*

IL-2-2 14:20-14:38 **Predicted Molecular Interaction between Human Lysosomal Sialidase (Neuraminidase 1) and Protective Protein/Cathepsin A**
*Kohji Itoh, Yoshito Kadota, Seiichi Aikawa, Fumiko Matsuzawa, Kohji Tsuta, Hitoshi Sakuraba, Tadashi Satoh, and Soichi Wakatsuki, *Japan*

IL-2-3 14:38-14:58 **Lysosomal Sialidase Neu4: a Novel Role in Glycolipid Catabolism**
*Pshezhetsky A.V., Seyrantepe V., Morales C.R., and Levade T., *Canada*

IL-2-4 14:58-15:18 **Spreading the *neus*: the Role of Sialic Acid Modulation in Neutrophil Function**
*Alan S. Cross, Simeon E. Goldblum, and Nicholas M. Stamatos, *USA*

IL-2-5 15:18-15:35 **Regulatory Roles of Plasma Membrane-Associated Sialidase (NEU3) in Expression of Malignant Properties of Human Cancer**
*Taeko Miyagi, Tadashi Wada, Keiko Hata, Kazunori Yamaguchi, Kengo Kato, Seiji Ueno, and Setsuko Moriya, *Japan*

KNL-2 15:35-16:00 **Induction of Axonal Differentiation by Silencing Plasma Membrane Associated Sialidase Neu3 in Neuroblastoma Cells**
Rea Valaperta, Manuela Valsecchi, Federica Rocchetta, Massimo Aureli, Simona Prioni, Alessandro Prinetti, Vanna Chigorno, and *Sandro Sonnino, *Italy*

16:00-16:30 Coffee Break (Lobby)

16:30-18:30 Session 3: Chemical and Physical Approach (Main Room)
Discussion leaders: Yukishige Ito, *Japan*; Yasuhiro Kajihara, *Japan*

IL-3-1 16:30-16:45 **Synthetic Study on the Complex Glycans Containing Sialic Acid Congeners**
*Hiromune Ando, *Japan*

IL-3-2 16:45-17:00 **Efficient Synthesis of Sialoglycosides Using New Synthetic Methodologies**
*Koichi Fukase, Katsunori Tanaka, Shin-ichi Tanaka, Hiroomi Tokimoto, Yasutaka Mori, Chika Kasamatsu, Yumiko Hori, and Takashi Goi, *Japan*

IL-3-3 17:00 -17:15 **Stereoselective Synthesis of Oligo-α(2,8) and α(2,9) Sialic Acids**
*Hiroshi Tanaka, Yuji Nishiura, and Takashi Takahashi, *Japan*

OP-3-1 17:15-17:30 **Chemical Basis for the Formation of a Unique Sialylate Linkage Utilizing CMP-Neu5Ac During Sialyltransferase Reaction**
*Y. Kajihara, S. Nishigaki, M. Sugahara, K. Hirano, N. Yamamoto, T.Sakakibara, S. Koizumi, and M. Miyano, *Japan*

OP-3-2 17:30-17:45 **A Transglycosylation Reaction of Sialooligosaccharide to Cyclohexanol Derivative by Using Endo-M**
Yusuke Tomabechi, Yuki Odate, Ryuko Izumi, and *Toshiyuki Inazu, *Japan*

IL-3-4 17:45-18:00 **Synergism in Sialylation: Reasons and Consequences**
*Leonid O. Kononov, Nelly N. Malysheva, and Elena G. Kononova, *Russia*

KNL-3 18:00-18:30 **Design of New Glycosyltransferase Inhibitors**
*Richard R. Schmidt, *Germany*

18:30-19:30 Dinner (Dining Room)

18:30-19:30 International Organizing Committee Meeting (??)

19:30-22:00 Poster session (Lobby)

20:00-22:30 Bar (Bar Lounge)

Tue, August 29th

7:30- 8:30 Breakfast (Dining Room)

8:45-11:45 Session 4: Medicinal and Industrial Applications (Main Room)
Discussion leaders: James C. Paulson, *USA*; Nicolai Bovin, *Russia*; Makoto Kiso, *Japan*

KNL-4-1 8:45-9:10 **Pandemic Influenza —The Re-emergence of an Old Threat**
Mark von Itzstein, *Australia*

KNL-4-2 9:10-9:35 **Carbohydrate Microarrays and Studies of the Interplay of Sialyl and Sulfo Motifs in Recognition by Selectins and Siglecs**
*Ten Feizi, *UK*

IL-4-1 9:35-9:55 **Design of a Probe for Neuraminidase to Capture and Identify Influenza Viruses**
Shih-Hsiung Wu, *Taiwan*

IL-4-2 9:55-10:15 **Field Diagnostics of Avian Influenza: Fast and Simple**
*N. Bovin, O. Kiselev, L. Mochalova, I. Lubavina, and A. Tuzikov, *Russia*

10:15-10-30 Coffee Break

IL-4-3 10:30-10:50 **Synthetic Glycopeptide Library for Investigating Molecular Functions and Essential Structures of Tumor-Associated Antigenic Glycoprotein**
*Shin-Ichiro Nishimura, Naoki Ohyabu, Takahiko Matsushita, Hiroshi Hinou, Ryuko Izumi, Hiroki Shimizu, and Hirosato Kondo, *Japan*

IL-4-4 10:50-11:05 **Designed Sugars against Influenza and Mycoplasma-Related Diseases**
*Yoshihiro Nishida, Yuko Shingu, Seiji Sato, and Kazuhiro Matsuda, *Japan*

OP-4-1 11:05-11:15 **Towards the Design of Human Sialidase 3 (NEU3) Selective Inhibitors: Homology Modeling and Preliminary Docking Studies**
*Sadagopan Magesh, Tohru Suzuki, Taeko Miyagi, Hideharu Ishida and Makoto Kiso, *Japan*

OP-4-2 11:15-11:25 **Sialic Acids: Unique Component Characters That Enhance Dramatically the Performance of Glycocodes**
Kenichi Kasai, *Japan*

OP-4-3 11:25-11:35 **The Effect of N-acyl Sialic Acid Precursor Treatment on Polysialic Acid Expression by Neuronal Cells**
Rob A. Pon, Nancy J. Biggs and *Harold J. Jennings, *Canada*

OP-4-4 11:35-11:45 **Sialic Acid: a Novel Nutrient That Enhances Learning and Memory**
*Bing Wang, Bing Yu, Muhsin Karim, Honghua Hu, Paul McGreevy, Peter Petocz, Suzanne Held, and Jennie Brand-Miller, *Australia*

12:30-18:00 Lunch and Excursion (Bus tour)

19:00-22:30 Banquet (Banquet Room)

Wed, August 30th

7:30-8:30 Breakfast (Dining Room)

8:45-11:50 Session 5: Sialic acid metabolism and unusual sialylation (Main Room)
Discussion leaders: Yuan C. Lee, *USA*; Frederic A. Troy, *USA*

KNL-5-1 8:45-9:10 **Phenotypic Characteristics of Mice Expressing Variant Allelic Combinations of the Polysialyltransferase genes St8siaII and St8siaIV**
*Rita Gerardy-Schahn, Hildegard Geyer, Birgit Weinhold, Sebastian P. Galuska, Imke Oltmann-Norden, Rudolf Geyer, Iris Röckle, Herbert Hildebrandt, and Martina Mühlenhoff, *Germany*

KNL-5-2 9:10-9:35 **Basis for the Protein-Specificity of Polysialic Acid Addition to NCAM**
*Karen J. Colley, Brett E. Close, Kristin Geiger, and Shalu Shiv Mendiratta, *USA*

IL-5-1 9:35-9:55 **Sialyl-Tn Expression Enhances Tumorigenecity Of Breast Cancer Cells**
Sylvain Julien, Anne Harduin-Lepers, Marie-Ange Krzewinski-Recchi, Eric Adriaenssens, Anne-Sophie Vercoutter-Edouart, Franz-Georg Hanisch, Xuefen Le Bourhis, and *Philippe Delannoy, *France*

IL-5-2 9:55-10:15 **The Biological Importance of the N-Acetyl Side Chain of Sialic Acid and Its Precursor as Shown by Its Biochemical Engineering**
Rüdiger Horstkorte, and Werner Reutter, *Germany*

10:15-10:30 Coffee break

IL-5-3 10:30-10:50 **Polysialic Acid on Microglia Cell and Its Clearance After LPS-Induced Activation**
*Chihiro Sato, Uichiro Yabe, Makoto Sawada, and Ken Kitajima, *Japan*

IL-5-4 10:50-11:10 **The Rainbow Trout CMP-KDN Synthetase Utilizes an Alternative Nuclear Localization Signal to That Identified in the Mouse Enzyme**
*Joe Tiralongo, Akiko Fujita, Chihiro Sato, Ken Kitajima, Rita Gerardy-Schahn, and Anja K. Muenster-Kuehnel, *Australia*

IL-5-5 11:10-11:30 **KDN and Polysialic Acids: Reflections on the Road We Have Come Along and Future Directions**
Sadako Inoue, *Japan*

OP-5-1 11:30-11:40 **A GNE Knockout Mouse Expressing Human V572L Mutation Develops Features Similar to Nonaka Myopathy or Distal Myopathy with Rimmed Vacuoles (DMRV)**
*May Christine V. Malicdan, Satoru Noguchi, Yukiko Hayashi, Ikuya Nonaka, and Ichizo Nishino, *Japan*

OP-5-2 11:40-11:50 CANCELED

12:00-12:45 Lunch (Dining Room)

12:45-13:45 Luncheon Seminar Provided by Shimadzu (Main Room)

14:00-16:00 Session 6: Sialic Acid and Disease (Main Room)

Discussion leaders: Reiji Kannagi (Nagoya); Werner Reutter (Berlin)

KNL-6 14:00-14:25 **Possible Presence of a Detoxification Mechanism in Tay-Sachs Disease by Taurine-Conjugation of the Sialic Acid Residue in GM2 Ganglioside**
*Yu-Teh Li, and Su-Chen Li, *USA*

IL-6-1 14:25-14:50 **The Polysialic Acid Glycotope: Degree of Polymerization and Glycopathology**
Daisuke Nakata, Kyoung-Ho Park, Bum Jung Park, Paul J. Donald, and *Frederic A. Troy II, *USA*

IL-6-2 CANCELED

IL-6-3 14:50-15:15 **Campylobacter Sialyltransferase Gene Polymorphisms Define Guillain-Barre or Fisher syndrome**
Nobuhiro Yuki, *Japan*

IL-6-4 15:15-15:35 **Regulatory Mechanisms for the Malignant Properties of Cancer Cells with Gangliosides**
*Koichi Furukawa, Kazunori Hamamura, Yusuke Ohmi, Momoko Tsuji, Hideyuki Nakashima, Keiko Furukawa, *Japan*

IL-6-5 15:35-15:50 **Differential Recognition of O-Acetylated Sialic Acids by Orthomyxo- and Nidoviruses**
Juliane Mayr, Thomas Haselhorst , Barbara Zehentner , Wolfgang Huber Cornelia Hauser-Kronberger , Robert Lang , Mark von Itzstein , and Reinhard Vlasak , *Austria*

OP-6-1 15:50-16:05 **Interaction of Siglecs with Synthetic Sialosides and *Trypanosoma cruzi***
Rahul Ravindran, Fabian Jacobi, Antje Kelm, Nicolai Bovin, Christiane Steeg, Thomas Jacobs, Sørge Kelm, *Germany*

16:05-16:30 Coffee Break (Lobby)

16:30-18:30 Session 7: New aspects of sialic acid recognition (Main Room)

Discussion leaders: Akemi Suzuki, *Japan*; Hiroshi Nakada, *Japan*

KNL-7-1 16:30 - 16:55 **Sialic Acid Binding Properties of Recombinant and Naturally Expressed Siglecs of the Immune System**
Sarah McMillan, Diana Gil, Jiquan Zhang, Helen Attrill, Daan van Aalten, Nicolai Bovin, and *Paul R. Crocker, *UK*

KNL-7-2 16:55-17:20 **Two Modes of Evolution in Sialobiology**
Ajit P. Varki, *USA*

IL-7-1 17:20-17:35 **Discovery of Siglecs with Activating Signaling Potential**
*Takashi Angata, *Japan*

IL-7-2 17:35-17:55 **Immunoglobulin Isotype-Dependent Regulation of B Cell Antigen Receptor Signaling Mediated by Siglec2/CD22**
Motohiko Sato, Chisato Wakabayashi, Yasuhisa Hokazono, Taishi Onodera, Takahiro Adachi, and *Takeshi Tsubata, *Japan*

IL-7-3 17:55-18:10 **Change of Neu5Gc Modification of Sialic Acid in Activated B Cells and Its Biological Significance**
Hiromu Takematsu, *Japan*

IL-7-4 18:10-18:30 **Sialic Acid Recognition in the Skin and Gut**
Reiji Kannagi, *Japan*

18:30-18:40 Closing address (Main Room) Makoto Kiso

18:40-19:30 Dinner (Dining Room)

Thu, August 31st

7:30- 8:30 Breakfast (Dining Room)

9:00-15:00 Optional tour (Bus tour)

POSTER PRESENTATION

PP-1 **Glycomic Mapping and Identification of Sialyl Le^x and Sialyl Le^a on Mucins from Human Ovarian Cyst Fluid**
*Albert M.Wu, Shin-Yi Yu, Zhangung Yang, Kay-Hooi Khoo, and Winifred M. Watkins, *Taiwan*

PP-2 **Glycosylation of Sialic Acid via Chemical Approach**
Cheng-Chung Wang, and Shang-Cheng Hung*, *Taiwan*

PP-3 **Synthesis of 9-Formyl Derivatives of Sialic Acid**
*K. Furuhata, M. Ando, N. Sato, and Y. Uda, *Japan*

PP-4 **Study on C-2 Substitution through Reduction of C-1 Position of Sialic Acid**
*Muneyoshi Kikkawa, and Teruo Yoshino, *Japan*

PP-5 **Effects of R344-Residue Substitutions on Intracellular Processing and Protective Function of Human Lysosomal Protective Protein / Cathepsin A**
*Yoshito Kadota, Seiichi Aikawa, Fumiko Matsuzawa, Kohji Tsuta, Hitoshi Sakuraba, and Kohji Itoh, *Japan*

PP-6 **Soluble Expression of Recombinant Human ST6Gal I in *Escherichia coli***
*Yugo Kanai, Kazuya I.P.J. Hidari, Shotaro Iwamoto, Yasuo Suzuki, and Takashi Suzuki, *Japan*

PP-7 **Trans-Sialidase Activity of Human Serum**
*K.L. Dobrochaeva, G.V. Pazynina, and N.V. Bovin, *Russia*

PP-8 **α-Selective Sialylation Using Neu5Ac-1-Amide Derivatives**
*Ryo Okamoto, Shingo Souma and Yasuhiro Kajihara, *Japan*

PP-9 **Expression of the Murine CMP-Sialic Acid Transport Protein in *Pichia pastoris***
*Andrea Maggioni, Rita Gerardy-Schahn, Mark von Itzstein, and Joe Tiralongo, *Australia*

PP-10 **Influenza A Virus-Binding Sialoglycoproteins in a Cell Membrane Fraction Extraxted from Human Alveolar Epithelial A549 Cells**
*Daisei miyamoto, Makoto Ito, Yuki Okawa, Shogo Sato, Yasuo Suzuki, and Takashi suzuki, *Japan*

PP-11 **Kinetic Analysis of the Binding of Influenza Viruses to Endogenous Gangliosides by SPR**
*Shizumi Shimada, Kazuya I.P.J. Hidari, Yasuo Suzuki, and Takashi Suzuki, *Japan*

PP-12 **Measurements of Bovine Milk Powder Ganglioside GD3: Analysis of Seasonal Trends and International Comparisons**
*Paul McJarrow, Sonia Patel, Frith Coolbear, and Alastair MacGibbon, New Zealand

PP-13 **Germinal Center B Cells Suppress CD22-Ligand Expression by Means of CMP-*N*-Acetylneuraminic Acid Hydroxylase Downregulation**
*Yuko Naito, Hiromu Takematsu, Harumi Yamamoto, Reiko Fujinawa, Manabu Sugai, Yasushi Okuno, Gozoh Tsujimoto, and Yasunori Kozutsumi, *Japan*

PP-14 **Synthetic Study of Sialo-cantaining Oligosaccharide Using N-Troc Sialyl Donors**
*Yuji Nishiura, Hiroshi Tanaka, Masaatsu, Adachi, and Takashi, Takahashi, *Japan*

PP-15 **Developmental Change of Neu4 Expression in Mouse Brain and Its Involvement in Neuronal Cell Differentiation**
*Kazuhiro Shiozaki, Koichi Koseki, Kazunori Yamaguchi, Momo Shiozaki, and Taeko Miyagi, *Japan*

PP-16 **Flagellasialin, a Novel Polysialic Acid Glycoprotein in Sea Urchin Sperm Is Involved in Sperm Motility**
Shinji Miyata, Chihiro Sato, Hironobu Kumita, Masaru Toriyama, Victor D. Vaquier, and *Ken Kitajima, *Japan*

PP-17 **Studies on Acid Instability of O-Glycosides of Cyclic Sialic Acid**
*Shoko Iwata, Nobuhiko Kawakami, Chihiro Sato, Hiromune Ando, Makoto Kiso, Reiji Kannagi, and Ken Kitajima, *Japan*

PP-18 **In Vivo Comparison of the Polysialylation Properties of ST8SiaII and ST8SiaIV**

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"Real-Time" Does Cover Much Wider Range of Functions. What Can "End Point" Find? (Real-Time Monitoring of Cell-Based Assays Using Electronic Cell Sensor Technology)

Yoshinaka Tsuyoshi
Wako Pure Chemical Industries, Ltd.

Abstract

Most cell-based assays are determined by single-point tests, which provide a "snapshot" of the experiment and often involve labeling and destruction of the cells. Since cells are living, there seems significant limitation, because biological and cellular processes are dynamic. In order to fully understand, appreciate and measure biological and cellular processes, it is necessary to use a system that is non-invasive and provides kinetic data regarding the dynamic nature of cellular response to certain challenges such as drug treatment or stimulation with a growth factor.

RT-CES system enables New-Era of Cell Based Assay with such application as;

1. Real-time examining cell proliferation and cytotoxicity.

2. Dynamic determining cell adhesion and spreading, receptor-ligand interactions in living cells, endothelial barrier function, Natural Killer cell-mediated cytolysis of cancer cells.