

# PROGRAM

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## June 25 (Sun)

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16:00 - 20:00	Registration
18:00 - 20:00	Poster Set Up
19:00 - 21:00	Welcome Reception

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## June 26 (Mon)

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8:55 - 9:00	Opening Remarks
<b>Session 1-1: N-Glycan</b>	
Chairs: A. Kobata, M. Pierce (9:00 - 10:15)	
Chairs: K. Suzuki, J. Marth (10:30 - 11:50)	
9:00 - 9:25	<b>William J. Lennarz:</b> A Key Enzyme in Protein <i>N</i> -Glycosylation: Oligosaccharyl Transferase
9:25 - 9:50	<b>Naoyuki Taniguchi:</b> Significance of Core Fucosylation in TGF- $\beta$ and Epidermal Growth Factor Receptor-Mediated Intracellular Signalings; Lessons from Gene Target Mice
9:50 - 10:15	<b>Jamey D. Marth:</b> Mammalian Protein Glycosylation in Cellular Mechanisms of Health and Disease
10:15 - 10:30	<i>Coffee Break</i>
10:30 - 10:55	<b>James W. Dennis:</b> Mgat5 Regulates Glucose Metabolism and Promotes Stem Cell Renewal
10:55 - 11:20	<b>Iain B. H. Wilson:</b> <i>N</i> -Glycosylation Pathways in <i>Caenorhabditis</i> and <i>Drosophila</i> : What Can We Learn from Model Organisms?
11:20 - 11:35	<b>Akira Togayachi:</b> Analysis of Mice Lacking $\beta$ -1,3- <i>N</i> -Acetylglucosaminyltransferase 2 Which Synthesizes Polylactosamine Chain
11:35 - 11:50	<b>Shogo Oka:</b> Function and Regulation of the HNK-1 Carbohydrate in the Nervous System
11:50 - 12:50	<b>Poster Session</b>
11:50 - 13:30	<i>Lunch</i>
<b>Session 1-2: Glycolipids</b>	
Chairs: S-I. Hakomori, C-H. Kim	
13:30 - 13:55	<b>Koichi Furukawa:</b> Regulation of Biosignals in Cancer Cells with Glycosphingolipids
13:55 - 14:20	<b>Cheorl-Ho Kim:</b> Transcriptional Regulation of the Human GD3 Synthase Gene Expression by Transcription Factor of NF- $\kappa$ B in Fas-Induced Jurkat T Cells
14:20 - 14:30	<b>Xiao-Qi Wang:</b> Ligand Binding to Lewis (Le) <sup>x</sup> and Sialyl-Le <sup>x</sup> Moieties of EGFR Promotes EGFR Signaling and Is Blocked by Ganglioside GM3
14:30 - 14:45	<i>Coffee Break</i>
<b>Session 1-3: O-Glycans</b>	
Chairs: Y. Nagai, R. Cummings	
14:45 - 15:10	<b>Gerald W. Hart:</b> O-GlcNAc Transferase: Complex Regulation & Roles in Cellular Metabolism
15:10 - 15:35	<b>Tatsuro Irimura:</b> Protective roles of a Galactose-Type C-Type Lectin CD301a/MGL1 Revealed by Pathogenic Models Applied to the Gene Deficient Mice
15:35 - 16:00	<b>Akemi Suzuki:</b> Kinsey Proximal Tubule Cell-Specific Regulation of Core 2 GnT in Mice
16:00 - 16:25	<b>Henrik Clausen:</b> Deciphering the Role of Mucin-Type O-Glycosylation for Sorting and Secretion
16:25 - 16:40	<i>Coffee Break</i>
<b>Session 1-4: Cancer</b>	
Chairs: K. Furukawa, M. Fukuda (16:40 - 17:55)	
Chairs: T. Irimura, P. Delannoy (18:10 - 19:20)	
16:40 - 17:05	<b>Minoru Fukuda:</b> 6-Sulfo Sialyl Lewis X on Both O- and N-Glycans Play Critical Roles as L-Selectin Ligands
17:05 - 17:30	<b>Katsuko Yamashita:</b> Structures and Functions of CEA Glycans in Colon Cancer
17:30 - 17:55	<b>Philippe Delannoy:</b> The Sialyltransferase Family: Molecular Genetic Analysis, Specificity and Role in Cancer Progression
17:55 - 18:10	<i>Coffee Break</i>
18:10 - 18:35	<b>Koich Honke:</b> Control of Cancer Metastasis by Remodeling of Carbohydrate Chains
18:35 - 19:00	<b>Jianxin Gu:</b> Study on the Function and Transcription Regulation of $\beta$ 1,4-Galactosyltransferase (GalT) V in Glioma
19:00 - 19:10	<b>Yuki I. Kawamura:</b> Therapeutic Potential of Gene Transfer of a Glycosyltransferase Using Adenoviral Vector to Prevent Cancer Metastasis
19:10 - 19:20	<b>Fabio Dall'Olio:</b> Biosynthesis of the Sd <sup>a</sup> Determinant by $\beta$ 1,4 <i>N</i> -Acetylgalactosaminyltransferase in Normal and Cancer Colon: Relationship with Sialyl Lewis X Expression

## June 27 (Tue)

### Session 2-1: Differentiation and Development

Chairs: T. Muramatsu, P. Stanley (9:00 - 10:10)

Chairs: T. Endo, J. Gu (10:25 - 11:10)

9:00 - 9:25 **Pamela Stanley**: Regulation of Notch1 Signaling by the O-Fucose Glycan in the Ligand Binding Domain

9:25 - 9:50 **Tetsuya Okajima**: Requirement of O-Fucosyltransferases for Developmental Processes

9:50 - 10:00 **Takashi Sato**: Molecular Cloning and Characterization of a Novel Human  $\beta$ 1,3-Glucosyltransferase,  $\beta$ 3Glc-T, Which Is Localized at the Endoplasmic Reticulum and Glucosylates O-linked Fucosylglycan on Thrombospondin Type 1 Repeat Domain

10:00 - 10:10 **Krisztina Kozma**: Identification of a UDP-Glucose Glucosyltransferase That Modifies Fucosylated Thrombospondin Type 1 Repeats

10:10 - 10:25 *Coffee Break*

10:25 - 10:50 **Michael Pierce**: Inhibition of EGF Receptor Signaling by Expression of GnT-Va-Specific siRNA in Human Breast Carcinoma Cells

10:50 - 11:00 **Jianguo Gu**: Cell-Cell Interaction-Dependent Regulation of N-Acetylglucosaminyltransferase III and the Bisected N-Glycans in GE11 Epithelial Cells: Involvement of E-Cadherin-Mediated Cell Adhesion

11:00 - 11:10 **Masanori Sakaguchi**: The Mechanisms of Galectin-1 in Promoting Proliferation of Adult Neural Stem Cells

11:10 - 12:10 **Poster Session**

12:00 - 13:30 *Lunch (AIST TOUR)*

### Session 2-2: GAG

Chairs: K. Kimata, K. Sugahara

13:30 - 13:55 **Kazuyuki Sugahara**: Chondroitin Sulfate/Dermatan Sulfate Hybrid Chains in the Development of Cerebellum: Spatiotemporal Regulation of the Expression of Critical Disulfated Disaccharides by Specific Sulfotransferases

13:55 - 14:20 **Hideto Watanabe**: Chondroitin Sulfate N-Acetylgalactosaminyltransferase-1 Plays a Critical Role in Chondroitin Sulfate Synthesis in Cartilage

14:20 - 14:45 **Kenji Kadomatsu**: N-Acetylglucosamine 6-O-Sulfotransferase-1 Is Required for Brain Keratan Sulfate Biosynthesis and Glial Scar Formation After Brain Injury

14:45 - 15:00 *Coffee Break*

### Session 2-3: Disease-Related Glycosylation

Chairs: A. Suzuki, G. Hart

15:00 - 15:25 **Richard D. Cummings**: Central Role of T-Synthase in O-Glycan Biosynthesis and its Regulation by the Chaperone Cosmc

15:25 - 15:50 **Thierry Hennet**: Glycosylation Disorders: Filling the Gaps in the Lipid-Linked Oligosaccharide Biosynthesis Pathway

15:50 - 16:15 **Tamao Endo**: Initiation of Protein O-Mannosylation and Walker-Warburg Syndrome

16:15 - 16:30 *Coffee Break*

### Session 2-4: Structural Glycobiology

Chairs: P. Qasba, S. Wakatsuki

16:30 - 16:55 **Hakon Leffler**: Galectin Ligand Binding Affinities in Solution and at the Cell Surface

16:55 - 17:20 **Soichi Wakatsuki**: Synchrotron X-Ray Sheds Light on Protein Glycosylation and Carbohydrate Recognition in Protein Transport

17:20 - 17:45 **Boopathy Ramakrishnan**: Structure and Function Studies on  $\beta$ 1,4-Galactosyltransferase-I Reveal Role of Two Flexible Loops in the Catalytic Function of the Enzyme and its Structural and Functional Similarities to Polypeptide  $\alpha$ -N-Acetylgalactosaminyltransferase

17:45 - 17:55 **Tomomi Kubota**: Structure and Substrate Specificity of Human pp-GalNAc-T10

**19:00 - Symposium Dinner**

## June 28 (Wed): NEDO DAY

### Session 3-1: Mass Spectrometry

Chairs: P. Rudd, H. Narimatsu

9:00 - 9:15 **Yoshinori Furukawa**: NEDO Project for Glycotechnology; the Past, the Present and the Future

9:15 - 9:40 **Michael Mormann**: Application of High Resolution Fourier-Transform Ion Cyclotron Resonance Mass Spectrometry to Glycoproteomics

9:40 - 10:05 **Kay-Hooi Khoo**: Mass Spectrometry Analysis in Delineating the Occurrence and Biosynthesis of Branched, Extended Type 1 Chain

10:05 - 10:15 **Akihiro Kameyama**: A System for Intelligent Identification of Oligosaccharides Using Observed and Simulated MS<sup>n</sup> Spectral Libraries

10:15 - 10:30 *Coffee Break*

### Session 3-2: Bioinformatics

Chairs: T. Kawasaki, R. Oriol

10:30 - 10:55 **Rafael Oriol**: Phylogeny of the Four Glycosyltransferase Families Involved in the Synthesis of the Linkage Region of Glycosaminoglycans (GAG)

10:55 - 11:20 **Bernard Henrissat**: CAZy: the Carbohydrate-Active Enzyme Database

11:20 - 11:45 **Naruya Saitou**: Relic of Ancient Recombinations in Gibbon ABO Blood Group Genes Suggests Transspecific Polymorphism

11:45 - 12:45 **Poster Session**

11:45 - 13:30 *Lunch*

### Session 3-3: Glycotechnology

Chairs: Y. Jigami, K-H. Khoo (13:00 - 14:40)

Chairs: H. Leffler, J. Hirabayashi (14:55 - 16:05)

13:30 - 13:55 **James C. Paulson**: Chemo-Enzymatic Synthesis of High Affinity Analogs of Siglec Ligands

13:55 - 14:20 **Warren Wakarchuk**: Sialyltransferases from *Campylobacter jejuni*: Update on the Structure and Function of Cst-I and Cst-II

14:20 - 14:30 **Cecilia P. C. Chiu**: Structural Analysis of the  $\alpha$ -2,3-Sialyltransferase Cst-I from *Campylobacter jejuni* in Both the Apo and Substrate-Analogue Bound Forms

14:30 - 14:40 **Yasuhiro Kajihara**: Insight into Activation Mechanism of CMP-Neu5Ac by Sialyltransferase

14:40 - 14:55 *Coffee Break*

14:55 - 15:20 **Jun Hirabayashi**: Development of Lectin-Based Glycotechnology and its Application

15:20 - 15:45 **Shoko Nishihara**: Functional Analyses of Glycosyltransferases, Sulfotransferases and Transporters by Using RNAi Flies

15:45 - 15:55 **Jerka Dunic**: The Expression of Galectin-3 in Activated Monocyte-Like Cells Is Affected by Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)

15:55 - 16:05 **Luke J. Alderwick**: Identification of a Novel Arabinofuranosyl Transferase (AftA) Involved in Cell Wall Arabinan Biosynthesis in *Mycobacterium tuberculosis*

16:05 - 16:20 *Coffee Break*

### Session 3-4: Biomarker

Chairs: N. Taniguchi, J. Paulson

16:20 - 16:45 **Jorge Filmus**: Glypican-3 Stimulates the Canonical Wnt Signaling Pathway in Hepatocellular Carcinoma, and Inhibits Hedgehog Activity in the Embryo

16:45 - 17:10 **Pauline M. Rudd**: New Strategies for Cancer Diagnostics

17:10 - 17:35 **Eiji Miyoshi**: Fucosylated Haptoglobin is a Novel Marker for Pancreatic Cancer: A Detailed Analysis of the Oligosaccharide Structure and a Possible Mechanism for Fucosylation

17:35 - 17:45 **Shinobu Kitazume**: Plasma Sialyltransferase: Its Formation Mechanism and Application to Hepatitis Diagnosis

17:45 - 18:05 **Ken Kitajima**: Discovery of Polysialic Acid in Microglia. Expression Changes of  $\alpha$ 2,8-Sialyltransferases During Activation of a Mouse Microglia Cell Line

**Business Meeting**