Announcing Keystone Symposia’s third conference in Japan

Diabetes: New Insights into Molecular Mechanisms and Therapeutic Strategies

October 25–29, 2015
Westin Miyako Kyoto | Kyoto | Japan

Scientific Organizers: Takashi Kadowaki, Juleen R. Zierath, Nobuya Inagaki and Barbara B. Kahn

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The prevalence of type 2 diabetes is rising to epidemic proportions worldwide. Type 2 diabetes is a complex disease caused by dysfunction of multiple organ systems, and disease susceptibility is profoundly influenced by both genetic and environmental factors. This meeting provides an essential forum for bringing together leading professionals in the academic and pharmaceutical communities with various specialties in diabetes research to share new approaches and research paradigms. The meeting will present the latest discoveries in diabetes research, highlighting essential aspects of diabetes, as well as emerging themes that are likely to provide novel therapeutic approaches. The ultimate goal is to encourage participants to communicate and exchange ideas to facilitate an integrative understanding of pathogenesis and development of therapeutic strategies for prevention and treatment of diabetes.

Session Topics:
• Islet Dysfunction in Diabetes
• Regenerative Medicine in Diabetes
• Gut Biology and Systemic Metabolism
• CNS Control of Metabolism
• Novel Insights into Adipocyte Biology
• Molecular Mechanisms Underlying Insulin Resistance
• Genetics and Epigenetics of Diabetes
• Diabetes and Healthy Lifespan

KEYNOTE SPEAKER:
Shinya Yamanaka

OTHER CONFIRMED SPEAKERS:
Domenico Accili
Jens C. Brüning
Nathalie Delzenne
Daniel J. Drucker
Joel K. Elmquist
Philippe Froguel
Nobuya Inagaki
David E. James
Linong Ji
Takashi Kadowaki
Barbara B. Kahn
Masato Kasuga
Michael Krashes
Venkatesh (Gary) Krishnan
Marcelo Nobrega
Philipp E. Scherer
Yutaka Seino
Kirsty L. Spalding
Bruce M. Spiegelman
Roland W. Stein
Scott M. Sternson
Markus Stoffel
Yu-Hua Tseng
James M. Wells
Juleen R. Zierath
As of June 15, 2015

Submitting an abstract is a great way of participating in the conference through poster presentation and possible selection for a short talk.

Abstract Deadline: July 23, 2015
Discounted Registration Deadline: August 25, 2015

For additional details, visit www.keystonesymposia.org/15T2.
SUNDAY, OCTOBER 25
Arrival and Registration

MONDAY, OCTOBER 26
Welcome Remarks
Takashi Kadowaki, University of Tokyo, Japan

Islet Dysfunction in Diabetes
*Domenico Accili*, Columbia University, USA
*Markus Stoffel*, ETH Zürich, Switzerland

MicroRNA Function in Pancreatic beta-Cells
*Roland W. Stein*, Vanderbilt University Medical Center, USA
Identification and Characterization of Transcriptional Coregulators of MafA and Pdx1
*Nobuya Inagaki*, Kyoto University Graduate School of Medicine, Japan
Non-Invasive Pancreatic Beta-Cell Imaging Using Radiolabeled Exendin Probe
*Nadeeja T. Wijesekara*, University of Toronto, Canada
Short Talk: Amyloid beta Induced Insulin Resistance Leads to Diabetes and Severe Neurodegeneration in Transgenic Mice
*Andrew Parker*, Zealand Pharma A/S, Denmark
Short Talk: Human Endogenous Retrovirus Type W Is Strongly Upregulated in T1D Pancreas and Dysregulates Insulin Production in vitro and in vivo
*C.K. Wong*, University of British Columbia, Canada
Short Talk: p300 Regulates Glucose Homeostasis by Maintaining Islet Mass

Poster Session 1

Workshop 1: Islet, Brain and Gut Biology
*Bei B. Zhang*, Pfizer Inc., USA
*Hisamitsu Ishihara*, Nihon University School of Medicine, Japan
*Yau-Sheng Tsai*, National Cheng Kung University, Taiwan
Egr-1 Deficiency Sensitizes Pancreatic beta-Cells To Palmitate-Induced ER Stress and Apoptosis
*Eitan M. Akirav*, Winthrop University Hospital, USA
Demethylation of Cytosine Analogs Reverse T1D and Improve beta-Cell Function
*Yuichi Tsuchiya*, Nara Institute of Science and Technology, Japan
Physiological Activation of Ire1α Upregulates a Subset of Insulin Folding Enzymes in Pancreatic β Cells
*Yasuhiro Minokoshi*, National Institute for Physiological Sciences, Japan
AMP-Activated Protein Kinase in CRH Neurons in the PVH Controls Food Selection Behavior
*Hua V. Lin*, Eli Lilly & Co., USA
Stimulation of Insulin and Incretin Secretion by Tryptophan Is Mediated by GPR142
*Olga Rudenko*, Copenhagen University, Denmark
Agonists for the Aromatic Amino Acid Receptor GPR142 Provides a Broad, Balanced Stimulation of Pancreatic and Gut Hormones Strongly Stimulating Glucose Disposal

Keynote Address
*Nobuya Inagaki*, Kyoto University Graduate School of Medicine, Japan
Shinya Yamanaka, Center for iPS Cell Research and Application, Kyoto University, Gladstone Institutes, Japan
Recent Progress in iPS Cell Research toward Regenerative Medicine

Regenerative Medicine in Diabetes
*Kohjiro Ueki*, Research Institute, National Center for Global Health and Medicine, Japan
*Domenico Accili*, Columbia University, USA
The New Biology of Beta Cell Failure
*Laura C. Alonso*, University of Massachusetts Medical School, USA
Homeostatic Control of beta Cell Proliferation by Insulin Demand via the Unfolded Protein response
*James M. Wells*, Cincinnati Children's Hospital Research Foundation, USA
Human Pluripotent Stem Cell-derived Tissues as New Models to Study Development, Digestive Diseases and Diabetes
*Noriko Kodani*, Keio University, Japan
Short Talk: Foxo1 CoRepressor (FCoR) Regulates alpha-Cell Mass and Maintain beta-Cell Identity in Cooperation with Foxo1

TUESDAY, OCTOBER 27

CNS Control of Metabolism
*Yasuhiro Minokoshi*, National Institute for Physiological Sciences, Japan
*Jens C. Brünig*, Max Planck Institute for Metabolism Research, Germany
CNS-dependent Control of Metabolism
*Joel K. Elmquist*, University of Texas Southwestern Medical Center, USA
SF-1 in the Hypothalamus: A Molecular Link Between Energy Balance Regulation and Exercise
*Micah Krasnes*, NIDDK, National Institutes of Health, USA
A neural basis for melanocortin-4 receptor regulated appetite
*Scott M. Sternson*, HHMI/Janelia Research Campus, USA
Molecular and Systems Neuroscience of Weight Loss
*Stephanie M. Correa*, University of California, San Francisco, USA
Short Talk: Sex-Specific Metabolic Roles of Estrogen Receptor alpha Signaling in the Medial basal Hypothalamus
*Lotte Bjerre Knudsen*, Novo Nordisk A/S, Denmark
Short Talk: Acylated GLP-1 Receptor Agonists Effectively Lower Body Weight and Directly Access POMC/CART Neurons in the Mouse Hypothalamus

Gut Biology and Systemic Metabolism
*Nathalie Delzenne*, Université Catholique de Louvain, Belgium
Gut Microbiota as a Tool in the Nutritional Management of Metabolic Disorders and Inflammation.
*Yutaka Seino*, Kansai Electric Power Medical Research Institute, Japan
Incretin-Based Therapies for Type 2 Diabetes: Focus on East Asian Perspectives and Hypoglycemia
**Poster Session 2**

**WEDNESDAY, OCTOBER 28**

**Novel Insights into Adipocyte Biology**

*Toshimasa Yamauchi*, University of Tokyo, Japan

*Bruce M. Spiegelman*, Harvard Medical School, USA

Transcriptional Control of Brown and Beige Fat: Toward a New Generation of Therapeutics

Yu-Hua Tseng, Joslin Diabetes Center/Harvard Medical School, USA

Functional and Clonal Analyses of Human Brown and White Fat Progenitors

Philipp E. Scherer, University of Texas Southwestern Medical Center, USA

Diabetes, Obesity and the Central Role of the Adipocyte in Maintaining Systemic Homeostasis

Naja Zenius Jespersen, Rigshospitalet, Denmark

Short Talk: Human Perirenal Fat Display a Location-Dependent Brown Fat Phenotype

Mary N. Teruel, Stanford University, USA

Short Talk: Controlling Low Rates of Adipogenesis through Noise, Ultra-High Feedback and Sensing Circadian Rhythms

Yuta Hiraike, Graduate School of Medicine, University of Tokyo, Japan

Short Talk: NFIA Controls the Brown Fat Gene Program by Co-Localizing with PPARgamma at Cell-Type-Specific Enhancers

Kei Sakamoto, Nestlé Institute of Health Sciences, Switzerland

Short Talk: Mechanism of Action of Metformin: Insights from an AMP-Insensitive FBP1 Knockin Mouse Model

**Molecular Mechanisms Underlying Insulin Resistance**

*Takashi Kadowaki*, University of Tokyo, Japan

*Barbara B. Kahn*, Beth Israel Deaconess Medical Center, Harvard Medical School, USA

Discovery of a Novel Class of Lipids with Anti-Diabetic and Anti-Inflammatory Effects

David E. James, University of Sydney, Australia

Molecular Mapping of Insulin Action and Insulin Resistance

Masato Kasuga, National Center for Global Health and Medicine, Japan

Insulin Signaling Network for Understanding Diabetes

Yun Sok Lee, University of California, San Diego, USA

Short Talk: Saturated Fatty Acids and Mitochondrial Dysfunction Initiates Inflammation and Insulin Resistance in Obesity

**Poster Session 3**

**THURSDAY, OCTOBER 29**

**Genetics and Epigenetics of Diabetes**

*Masato Kasuga*, National Center for Global Health and Medicine, Japan

Linong Ji, Peking University People’s Hospital, China

Genetic Study and Management of Diabetes: Asian Perspective

Philippe Froguel, Imperial College of London, UK

The Genetic Link between Nutrients, the Gut Microbiome and Metabolism

Juleen R. Zierath, Karolinska Institutet, Sweden

Exercise as a Medicine to Improve Insulin Sensitivity in Type 2 Diabetes

Marcelo Nobrega, University of Chicago, USA

Regulatory Variants and Metabolic Diseases

Koshi Hashimoto, Tokyo Medical and Dental University, Japan

Short Talk: DNA Methylation Status in Early Life as an Epigenetic Memory and Its Physiological Significance in Later Life

Yurong Xin, Regeneron Pharmaceuticals, Inc., USA

Short Talk: Single-cell RNA Sequencing of Healthy and Type 2 Diabetes Pancreatic Islet Cells

**Workshop 2: Insulin Resistance, Healthy Lifespan and Genetics of Diabetes**

*Yu-Hua Tseng*, Joslin Diabetes Center/Harvard Medical School, USA

*Iichiro Shimomura*, Osaka University Graduate School of Medicine, Japan

Guang Yang, University of Sydney, Australia

Characterization of RagC Phosphorylation Sites Reveals Self-Regulation of mTOR Complex 1

Natasha Chaudhary, Weill Cornell Medical College, USA

RAB22A, a Regulator of Menkes Copper Transporter ATP7A Trafficking, Functions in Insulin-Stimulated GLUT4 Trafficking

Tetsuya Kimura, Immunology Frontier Research Center, Osaka University, Japan

Prevention of Obesity, Fatty Liver and Diabetes by Macrophages

Sang Won Park, Boston Children’s Hospital, USA

Regulation of Glucose Homeostasis through brd7-p85 Interaction

Essi M. Havula, University of Helsinki and Institute of Biotechnology, Finland

ChREBP/Mondo-Mlx Mediates Organismal Sugar sensing through Gli-Similar Transcription Factor Sugarbabe

Markus Jabs, German Cancer Research Center, Germany

The Endothelium Actively Balances Glucose and Fatty Acid Metabolism

Yibo Wu, RIKEN Center for Integrative Medical Sciences, Japan

Systems Proteomics and Trans Òmic Data Integration – Uncovering Novel Diabetic Genes

**Diabetes and Healthy Lifespan**

*Philippe Froguel*, Imperial College of London, UK
Masaomi Nangaku, University of Tokyo School of Medicine, Japan
Ulf Smith, Göteborg University, UGOT, Sweden
The Roles of Wnt and BMP Signaling in Insulin Resistance and Obesity
Gary Krishnan, Eli Lilly and Company, USA
Efficient Remodeling of Skeletal Muscle Is Crucial for Recovery after Exercise and Relies on Innate Lymphoid Cells
Takashi Kadowaki, University of Tokyo, Japan
Adiponectin Receptor and Metabolic Syndrome: Pathophysiology and Therapeutic Strategy

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)
Nobuya Inagaki, Kyoto University Graduate School of Medicine, Japan
Takashi Kadowaki, University of Tokyo, Japan
Barbara B. Kahn, Beth Israel Deaconess Medical Center, Harvard Medical School, USA
Juleen R. Zierath, Karolinska Institutet, Sweden

FRIDAY, OCTOBER 30
Departure