

IN THIS ISSUE

233 In This Issue of *Diabetes*

PERSPECTIVES IN DIABETES

235 Glucagon and Amino Acids Are Linked in a Mutual Feedback Cycle: The Liver- α -Cell Axis
J.J. Holst, N.J. Wewer Albrechtsen, J. Pedersen, and F.K. Knop

241 Differentiation of Diabetes by Pathophysiology, Natural History, and Prognosis
J.S. Skyler, G.L. Bakris, E. Bonifacio, T. Darsow, R.H. Eckel, L. Groop, P.-H. Groop, Y. Handelsman, R.A. Insel, C. Mathieu, A.T. McElvaine, J.P. Palmer, A. Pugliese, D.A. Schatz, J.M. Sosenko, J.P.H. Wilding, and R.E. Ratner

COMMENTARIES

256 Bonding With β -Cells—A Role for Oxytocin in Glucose Handling
M.J. Scerbo and J.M. Gerdes

258 Follicular T Helper Cells: A New Marker of Type 1 Diabetes Risk?
F. Heuts, N.M. Edner, and L.S.K. Walker

261 Müller Cell–Microglia Cross Talk Drives Neuroinflammation in Diabetic Retinopathy
S.F. Abcouwer

METABOLISM

264 Oxytocin Improves β -Cell Responsivity and Glucose Tolerance in Healthy Men
J. Klement, V. Ott, K. Rapp, S. Brede, F. Piccinini, C. Cobelli, H. Lehnert, and M. Hallschmid

272 Adipocyte Glucocorticoid Receptor Deficiency Attenuates Aging- and HFD-Induced Obesity and Impairs the Feeding-Fasting Transition
K.M. Mueller, K. Hartmann, D. Kaltenecker, S. Vettorazzi, M. Bauer, L. Mauer, S. Amann, S. Jall, K. Fischer, H. Esterbauer, T.D. Müller, M.H. Tschöp, C. Magnes, J. Haybaeck, T. Scherer, N. Bording, J.P. Tuckermann, and R. Morigg

287 Insulin-Like Growth Factor Binding Protein 1 Could Improve Glucose Regulation and Insulin Sensitivity Through Its RGD Domain
N.J. Haywood, P.A. Cordell, K.Y. Tang, N. Makova, N.Y. Yuldasheva, H. Imrie, H. Viswambaran, A.F. Bruns, R.M. Cubbon, M.T. Kearney, and S.B. Wheatcroft

300 Lack of CUL4B in Adipocytes Promotes PPAR γ -Mediated Adipose Tissue Expansion and Insulin Sensitivity
P. Li, Y. Song, W. Zan, L. Qin, S. Han, B. Jiang, H. Dou, C. Shao, and Y. Gong

314 Transient Receptor Potential Canonical 3 (TRPC3) Channels Are Required for Hypothalamic Glucose Detection and Energy Homeostasis
C. Chrétien, C. Fenech, F. Liénard, S. Grall, C. Chevalier, S. Chaudy, X. Brenachot, R. Berges, K. Louche, R. Stark, E. Nédélec, A. Laderrière, Z.B. Andrews, A. Benani, V. Flockerzi, J. Gascuel, J. Hartmann, C. Moro, L. Birnbaumer, C. Leloup, L. Pénicaud, and X. Fioramonti

325 Integrin-Linked Kinase Is Necessary for the Development of Diet-Induced Hepatic Insulin Resistance
A.S. Williams, E. Trefts, L. Lantier, C.A. Grueter, D.P. Bracy, F.D. James, A. Pozzi, R. Zent, and D.H. Wasserman

335 Functional Investigations of *HNF1A* Identify Rare Variants as Risk Factors for Type 2 Diabetes in the General Population
L.A. Najmi, I. Aukrust, J. Flannick, J. Molnes, N. Burt, A. Molven, L. Groop, D. Altshuler, S. Johansson, L. Bjørkhaug, and P.R. Njølstad

347 Circulating MicroRNA-122 Is Associated With the Risk of New-Onset Metabolic Syndrome and Type 2 Diabetes
P. Willeit, P. Skrobilin, A.R. Moschen, X. Yin, D. Kaudewitz, A. Zampetaki, T. Barwari, M. Whitehead, C.M. Ramirez, L. Goedeke, N. Rotllan, E. Bonora, A.D. Hughes, P. Santer, C. Fernández-Hernando, H. Tilg, J. Willeit, S. Kiechl, and M. Mayr

358 Hepatic Expression of Adenovirus 36 E4ORF1 Improves Glycemic Control and Promotes Glucose Metabolism Through AKT Activation
T.B. McMurphy, W. Huang, R. Xiao, X. Liu, N.V. Dhurandhar, and L. Cao

372 The Hypothalamic Glucagon-Like Peptide 1 Receptor Is Sufficient but Not Necessary for the Regulation of Energy Balance and Glucose Homeostasis in Mice
M.A. Burmeister, J.E. Ayala, H. Smouse, A. Landivar-Rocha, J.D. Brown, D.J. Drucker, D.A. Stoffers, D.A. Sandoval, R.J. Seeley, and J.E. Ayala

385 Intestinal Glycolysis Visualized by FDG PET/CT Correlates With Glucose Decrement After Gastrectomy
C.R. Ku, N. Lee, J.W. Hong, I.G. Kwon, W.J. Hyung, S.H. Noh, E.J. Lee, M. Yun, and A. Cho

Keep up with the latest information for *Diabetes* and other ADA titles via Facebook (/ADAJournals) and Twitter (@ADA_Journals).

All articles in *Diabetes* are available online at diabetes.org/diabetes, are available free to subscribers, or can be purchased as e-prints or reprints.

ADA's Diabetes Core Update podcast is available at diabetesjournals.org and through iTunes.

Icons shown below appear on the first page of an article if more information is available online.



Free Article



Video



Podcast




Supplementary Data



Companion Article

OBESITY STUDIES

- 392** Macrophage Proliferation Sustains Adipose Tissue Inflammation in Formerly Obese Mice
B.F. Zamarron, T.A. Mergian, K.W. Cho, G. Martinez-Santibanez, D. Luan, K. Singer, J.L. DelProposto, L.M. Geletka, L.A. Muir, and C.N. Lumeng
- 407** Visualization and Quantification of Browning Using a *Ucp1-2A*-Luciferase Knock-in Mouse Model
L. Mao, B. Nie, T. Nie, X. Hui, X. Gao, X. Lin, X. Liu, Y. Xu, X. Tang, R. Yuan, K. Li, P. Li, K. Ding, Y. Wang, A. Xu, J. Fei, W. Han, P. Liu, L. Madsen, K. Kristiansen, Z. Zhou, S. Ding, and D. Wu
- 418** Improved Glucose Homeostasis in Obese Mice Treated With Resveratrol Is Associated With Alterations in the Gut Microbiome
 M.M. Sung, T.T. Kim, E. Denou, C.-L.M. Soltys, S.M. Hamza, N.J. Byrne, G. Masson, H. Park, D.S. Wishart, K.L. Madsen, J.D. Schertzer, and J.R.B. Dyck

ISLET STUDIES

- 426** Pancreatic β -Cells Express the Fetal Islet Hormone Gastrin in Rodent and Human Diabetes
T. Dahan, O. Ziv, E. Horwitz, H. Zemmour, J. Lavi, A. Swisa, G. Leibowitz, F.M. Ashcroft, P. In't Veld, B. Glaser, and Y. Dor

IMMUNOLOGY AND TRANSPLANTATION

- 437** Circulating CXCR5⁺PD-1⁺ICOS⁺ Follicular T Helper Cells Are Increased Close to the Diagnosis of Type 1 Diabetes in Children With Multiple Autoantibodies
T. Viisanen, E.-L. Ihantola, K. Näntö-Salonen, H. Hyöty, N. Nurminen, J. Selvenius, A. Juutilainen, L. Moilanen, J. Pihlajamäki, R. Veijola, J. Toppari, M. Knip, J. Ilonen, and T. Kinnunen
- 448** Reversal of Diabetes in NOD Mice by Clinical-Grade Proinsulin and IL-10–Secreting *Lactococcus lactis* in Combination With Low-Dose Anti-CD3 Depends on the Induction of Foxp3-Positive T Cells
T. Takiishi, D.P. Cook, H. Korf, G. Sebastiani, F. Mancarella, J.P.M.C.M. Cunha, C. Wasserfall, N. Casares, J.J. Lasarte, L. Steidler, P. Rottiers, F. Dotta, C. Gysemans, and C. Mathieu
- 460** Primary Human and Rat β -Cells Release the Intracellular Autoantigens GAD65, IA-2, and Proinsulin in Exosomes Together With Cytokine-Induced Enhancers of Immunity
C. Cianciaruso, E.A. Phelps, M. Pasquier, R. Hamelin, D. Demurtas, M. Alibashe Ahmed, L. Piemonti, S. Hirose, M.A. Swartz, M. De Palma, J.A. Hubbell, and S. Baekkeskov

PATHOPHYSIOLOGY

- 474** Oxidized LDL Is Associated With Metabolic Syndrome Traits Independently of Central Obesity and Insulin Resistance
Y. Hurtado-Roca, H. Bueno, A. Fernandez-Ortiz, J.M. Ordovas, B. Ibañez, V. Fuster, F. Rodriguez-Artalejo, and M. Laclaustra

COMPLICATIONS

- 483** CD40 in Retinal Müller Cells Induces P2X₇-Dependent Cytokine Expression in Macrophages/Microglia in Diabetic Mice and Development of Early Experimental Diabetic Retinopathy
J.-A.C. Portillo, Y. Lopez Corcino, Y. Miao, J. Tang, N. Sheibani, T.S. Kern, G.R. Dubyak, and C.S. Subauste
- 494** Macrophage Cyclooxygenase-2 Protects Against Development of Diabetic Nephropathy
X. Wang, B. Yao, Y. Wang, X. Fan, S. Wang, A. Niu, H. Yang, A. Fogo, M.-Z. Zhang, and R.C. Harris
- 505** Reversal of Bone Marrow Mobilopathy and Enhanced Vascular Repair by Angiotensin-(1-7) in Diabetes
G. Vasam, S. Joshi, S.E. Thatcher, S.H. Bartelmez, L.A. Cassis, and Y.P.R. Jarajapu
- 519** PPAR δ Is Required for Exercise to Attenuate Endoplasmic Reticulum Stress and Endothelial Dysfunction in Diabetic Mice
W.S. Cheang, W.T. Wong, L. Zhao, J. Xu, L. Wang, C.W. Lau, Z.Y. Chen, R.C.W. Ma, A. Xu, N. Wang, X.Y. Tian, and Y. Huang
- 529** Metallothionein Is Downstream of Nrf2 and Partially Mediates Sulforaphane Prevention of Diabetic Cardiomyopathy
J. Gu, Y. Cheng, H. Wu, L. Kong, S. Wang, Z. Xu, Z. Zhang, Y. Tan, B.B. Keller, H. Zhou, Y. Wang, Z. Xu, and L. Cai

GENETICS/GENOMES/PROTEOMICS/METABOLOMICS

- 543** Systolic Blood Pressure and Risk of Type 2 Diabetes: A Mendelian Randomization Study
R.C. Aikens, W. Zhao, D. Saleheen, M.P. Reilly, S.E. Epstein, E. Tikkanen, V. Salomaa, and B.F. Voight
- 551** *hZnT8* (Slc30a8) Transgenic Mice That Overexpress the R325W Polymorph Have Reduced Islet Zn²⁺ and Proinsulin Levels, Increased Glucose Tolerance After a High-Fat Diet, and Altered Levels of Pancreatic Zinc Binding Proteins
L. Li, S. Bai, and C.T. Sheline

ERRATA

- 560** Erratum. Functional Brain Networks Are Altered in Type 2 Diabetes and Prediabetes: Signs for Compensation of Cognitive Decrements? The Maastricht Study. *Diabetes* 2016;65:2404–2413
F.C.G. van Bussel, W.H. Backes, T.M. van Veenendaal, P.A.M. Hofman, M.P.J. van Boxtel, M.T. Schram, S.J.S. Sep, P.C. Dagnelie, N. Schaper, C.D.A. Stehouwer, J.E. Wildberger, and J.F.A. Jansen
- 560** Erratum. Impact of Perturbed Pancreatic β -Cell Cholesterol Homeostasis on Adipose Tissue and Skeletal Muscle Metabolism. *Diabetes* 2016;65:3610–3620
B.J. Cochran, L. Hou, A.P.C. Manavalan, B.M. Moore, F. Tabet, A. Sultana, L. Cuesta Torres, S. Tang, S. Shrestha, P. Senanayake, M. Patel, W.J. Ryder, A. Bongers, M. Maraninchi, V.C. Wasinger, M. Westerterp, A.R. Tall, P.J. Barter, and K.-A. Rye

ISSUES AND EVENTS

- 561** Issues and Events

On the cover: Primary rat islet cells immunostained for insulin (green), the exosome marker CD81 (red), *trans* Golgi marker TGN38 (magenta), and nuclei (blue) reveal colocalization of insulin and CD81 in a subgroup of insulin-positive vesicles budding off from the *trans* Golgi membranes. Image courtesy of Chiara Cianciaruso, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland. Her article, “Primary Human and Rat β -Cells Release the Intracellular Autoantigens GAD65, IA-2, and Proinsulin in Exosomes Together With Cytokine-Induced Enhancers of Immunity,” appears in this issue of *Diabetes* (p. 460).