A JOURNAL OF THE AMERICAN DIABETES ASSOCIATION

IN THIS ISSUE

661  In This Issue of Diabetes

PERSPECTIVES IN DIABETES

663  Mitochondrial Hormesis and Diabetic Complications
     K. Sharma

673  Insulin Resistance as a Physiological Defense Against
     Metabolic Stress: Implications for the Management of
     Subsets of Type 2 Diabetes
     C.J. Nolan, N.B. Ruderman, S.E. Kahn, O. Pedersen, and M. Prentki

COMMENTARIES

687  Whenever You Lose Connection, Take Intranasal Insulin?
     A. Gottschalk and B. Ellger

689  Adipose Modulation of ABCG1 Uncovers an Intimate Link
     Between Sphingomyelin and Triglyceride Storage
     A.J. Murphy and L. Yvan-Charvet

693  New Insights of \( \mu \)-Calpain in the Pathogenesis of Diabetic
     Vascular Injury
     Y. Zhang and J. Ren

696  Is Brain Insulin Action Relevant to the Control of Plasma
     Glucose in Humans?
     D.S. Edgerton and A.D. Cherrington

700  Disruption of Insulin Receptor Signaling in Endothelial
     Cells Shows the Central Role of an Intact Islet Blood Flow
     for In Vivo \( \beta \)-Cell Function
     P.-O. Carlsson and L. Jansson

703  Nonesterified Fatty Acids, Albumin, and Platelet
     Aggregation
     S. Dhindsa, H. Ghanim, and P. Dandona

706  Solving the Riddle of the Sphinx May Provide New
     Insights Into Diabetes and Polyneuropathy
     C.J. Klein

709  Cadherins in Islet \( \beta \)-Cells: More Than Meets the Eye
     V. Cirulli

712  Air Pollution and Insulin Resistance: Do All Roads Lead to
     Rome?
     U.P. Kodavanti

715  Hepato-Incretin Function of GLP-1: Novel Concept and
     Target in Type 1 Diabetes
     B. Ahrén

METHODOLOGY REVIEW

718  Metabolomics and Diabetes: Analytical and
     Computational Approaches
     K.M. Sas, A. Karnovsky, G. Michailidis, and S. Pennathur

METABOLISM

733  Adipocyte Pseudohypoxia Suppresses Lipolysis
     and Facilitates Benign Adipose Tissue Expansion
     Z. Michailidou, N.M. Morton, J.M. Moreno Navarrete, C.C. West,
     K.J. Stewart, J.M. Fernández-Real, C.J. Schofield, J.R. Seckl, and
     P.J. Ratcliffe

746  Deletion of Both Rab-GTPase–Activating Proteins
     TBC1D1 and TBC1D4 in Mice Eliminates Insulin-
     and AICAR-Stimulated Glucose Transport
     A. Chadt, A. Immisch, C. de Wendt, C. Springer, Z. Zhou,
     T. Stermann, G.D. Holman, D. Loffing-Cueni, J. Loffing,
     H.-G. Joost, and H. Al-Hasani

760  Central Nervous Insulin Administration Does Not
     Potentiate the Acute Glucoregulatory Impact of
     Concurrent Mild Hyperinsulinemia
     V. Ott, H. Lehmert, J. Staab, K. Wünne, J. Born, and M. Hallschmid

766  Intranasal Insulin Suppresses Endogenous Glucose
     Production in Humans Compared With Placebo in the
     Presence of Similar Venous Insulin Concentrations
     S. Dash, C. Xiao, C. Morgantini, K. Koulajian, and G.F. Lewis

775  Ligand-Activated PPARα-Dependent DNA Demethylation
     Regulates the Fatty Acid \( \beta \)-Oxidation Genes in the
     Postnatal Liver
     T. Ebara, Y. Kamei, X. Yuan, M. Takahashi, S. Kanai, E. Tamura,
     K. Tsujiimoto, T. Tamiya, Y. Nakagawa, H. Shimano,
     T. Takai-Igarashi, I. Hatada, T. Suganami, K. Hashimoto, and Y. Ogawa

785  Inactivation of Corticotropin-Releasing Hormone–
     Induced Insulinotropic Role by High-Altitude Hypoxia
     K. Hao, F.-P. Kong, Y.-Q. Gao, J.-W. Tang, J. Chen, A.M. Evans,

796  Liver Glycogen Reduces Food Intake and Attenuates
     Obesity in a High-Fat Diet–Fed Mouse Model
     I. López-Soldado, D. Zafra, J. Duran, A. Adrover, J. Calbó,
     and J.J. Guinovart

808  Acute Activation of Cannabinoid Receptors by
     Anandamide Reduces Gastrointestinal Motility and
     Improves Postprandial Glycemia in Mice
     S. Troy-Fioramonti, L. Demizieux, J. Gresti, T. Muller, B. Vergès,
     and P. Degrace

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 print subscribers, or can be purchase as e-prints
or reprints.
ADA’s Diabetes Core Update podcast is available at diabetesjournals.
or and through iTunes.

Icons shown below appear on the first page of an article if more
information is available online.
Treatment of Diabetic Rats With Insulin or a Synthetic Insulin Receptor Agonist Peptide Leads to Divergent Metabolic Responses

ERRATUM
Deletion of Placental Growth Factor Prevents Diabetic Retinopathy and Is Associated With Akt Activation and HIF1α-VEGF Pathway Inhibition. Diabetes 2015;64:200–212
H. Huang, J. He, D. Johnson, Y. Wei, Y. Liu, S. Wang, G.A. Lutty, E.J. Duh, and R.D. Semba

EXPRESSION OF CONCERN
Expression of Concern

ISSUES AND EVENTS
Issues and Events

e-LETTERS – COMMENTS AND RESPONSES
W.-L. Yu and Y. Sun

The American Diabetes Association (ADA) is the nation’s leading voluntary health organization supporting diabetes research, information, and advocacy. Its mission is to prevent and cure diabetes and to improve the lives of all people affected by diabetes. ADA is the leading publisher of comprehensive diabetes information. Its huge library of books and periodicals covers every aspect of diabetes and diabetes care.

To join ADA: Call 1-800-806-7801 or visit professional.diabetes.org/membership
To subscribe to ADA journals: Call 1-800-DIABETES or go to diabetesjournals.org
To order ADA books: Call 1-800-232-6733 or visit shopdiabetes.org
To access ADA’s library of professional resources: Go to professional.diabetes.org
For more information about diabetes or ADA programs and services: Call 1-800-DIABETES. E-mail: AskADA@diabetes.org or visit diabetes.org
To locate an ADA/NCQA Recognized Provider of quality diabetes care in your area: Visit recognition.ncqa.org
To join the fight to increase funding for diabetes research, end discrimination, and improve insurance coverage: Call 1-800-DIABETES or visit diabetes.org/advocacy
To find out how you can get involved with the programs in your community: Call 1-800-DIABETES or visit diabetes.org/in-my-community
To find out about important research regarding diabetes: Go to diabetes.org/research-and-practice
To make a donation or memorial contribution: Call 1-800-DIABETES or visit diabetes.org/donate

On the cover: Hematoxylin and eosin photomicrograph depicting chorangiosis in gestational diabetes mellitus placenta (magnification 40×), courtesy of Rekha Samuel, MD, Professor of Pathology, Centre for Stem Cell Research, Christian Medical College, Vellore, India. Funding for this work was provided through the Department of Biotechnology, Ministry of Science and Technology (BT/PR5915/MED/31/172/2012, BT/PR7990/MED/32/282/2013) and the Science and Engineering Research Council (SB/FT/LS-196/2012), Government of India.