

VOLUME 56, NO. 10 DIABETES: A Journal of the American Diabetes Association®

October 2007

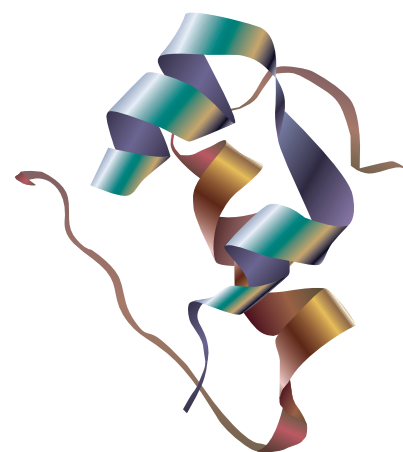
Pages 2417-2652

diabetes

OCTOBER 2007 VOLUME 56 NUMBER 10

A JOURNAL OF THE
AMERICAN DIABETES
ASSOCIATION®

www.diabetes.org/diabetes



COMMENTARY

Testing the gene or testing a variant? The case of TCF7L2

M.O. GOODARZI AND J.I. ROTTER 2417

PERSPECTIVES IN DIABETES

Estimation of β -cell mass by metabolic tests: necessary, but how sufficient?

R.P. ROBERTSON 2420

METABOLISM

L-Carnosine, a substrate of carnosinase-1, influences glucose metabolism

S. SAUERHÖFER, G. YUAN, G.S. BRAUN, M. DEINZER, M. NEUMAIER, N. GRETZ, J. FLOEGE, W. KRIZ, F. VAN DER WOUDE, AND M.J. MOELLER 2425

The contribution of splanchnic fat to VLDL triglyceride is greater in insulin-resistant than insulin-sensitive men and women: studies in the postprandial state

L. HODSON, A.S.T. BICKERTON, S.E. MCQUAID, R. ROBERTS, F. KARPE, K.N. FRAYN, AND B.A. FIELDING 2433

Glucagon, in concert with insulin, supports the postabsorptive plasma glucose concentration in humans

S.M. BRECKENRIDGE, B.A. COOPERBERG, A.M. ARBELAEZ, B.W. PATTERSON, AND P.E. CRYER 2442

PTEN expression contributes to the regulation of muscle protein degradation in diabetes

Z. HU, I.H. LEE, X. WANG, H. SHENG, L. ZHANG, J. DU, AND W.E. MITCH 2449

Mitochondrial energetics in the heart in obesity-related diabetes: direct evidence for increased uncoupled respiration and activation of uncoupling proteins

S. BOUDINA, S. SENA, H. THEOBALD, X. SHENG, J.J. WRIGHT, X.X. HU, S. AZIZ, J.I. JOHNSON, H. BUGGER, V.G. ZAHA, AND E.D. ABEL 2457

The transcriptional coactivator peroxisome proliferator-activated receptor (PPAR) γ coactivator-1 α and the nuclear receptor PPAR α control the expression of glycerol kinase and metabolism genes independently of PPAR γ activation in human white adipocytes

A. MAZZUCOTELLI, N. VIGUERIE, C. TIRABY, J.-S. ANNICOTTE, A. MAIRAL, E. KLIMCAKOVA, E. LEPIN, P. DELMAR, S. DEJEAN, G. TAVERNIER, C. LEFORT, J. HIDALGO, T. PINEAU, L. FAJAS, K. CLÉMENT, AND D. LANGIN 2467

Phosphorylation barriers to skeletal and cardiac muscle glucose uptakes in high-fat-fed mice: studies in mice with a 50% reduction of hexokinase II

P.T. FUEGER, R.S. LEE-YOUNG, J. SHEARER, D.P. BRACY, S. HEIKKINEN, M. LAAKSO, J.N. ROTTMAN, AND D.H. WASSERMAN 2476

Farnesoid X receptor modulates renal lipid metabolism, fibrosis, and diabetic nephropathy

T. JIANG, X.X. WANG, P. SCHERZER, P. WILSON, J. TALLMAN, H. TAKAHASHI, J. LI, M. IWAHASHI, E. SUTHERLAND, L. AREND, AND M. LEVI 2485

SIGNAL TRANSDUCTION

Orexins control intestinal glucose transport by distinct neuronal, endocrine, and direct epithelial pathways

R. DUCROC, T. VOISIN, A. EL FIRAR, AND M. LABURTHE 2494

FGFR4 prevents hyperlipidemia and insulin resistance but underlies high-fat diet-induced fatty liver

X. HUANG, C. YANG, Y. LUO, C. JIN, F. WANG, AND W.L. MCKEEHAN 2501

OBESITY STUDIES

Deficiency of *Cbl-b* gene enhances infiltration and activation of macrophages in adipose tissue and causes peripheral insulin resistance in mice

K. HIRASAKA, S. KOHNO, J. GOTO, H. FUROCHI, K. MAWATARI, N. HARADA, T. HOSAKA, Y. NAKAYA, K. ISHIDOH, T. OBATA, Y. EBINA, H. GU, S. TAKEDA, K. KISHI, AND T. NIKAWA 2511

Cideb regulates diet-induced obesity, liver steatosis, and insulin sensitivity by controlling lipogenesis and fatty acid oxidation

J.Z. LI, J. YE, B. XUE, J. QI, J. ZHANG, Z. ZHOU, Q. LI, Z. WEN, AND P. LI 2523

The adipokine lipocalin 2 is regulated by obesity and promotes insulin resistance

Q.-W. YAN, Q. YANG, N. MODY, T.E. GRAHAM, C.-H. HSU, Z. XU, N.E. HOUSTIS, B.B. KAHN, AND E.D. ROSEN 2533

Mice heterozygous for tumor necrosis factor- α converting enzyme are protected from obesity-induced insulin resistance and diabetes

M. SERINO, R. MENGHINI, L. FIORENTINO, R. AMORUSO, A. MAURIELLO, D. LAURO, P. SBRACCIA, M.L. HRIBAL, R. LAURO, AND M. FEDERICI 2541

Glucose ingestion fails to inhibit hypothalamic neuronal activity in patients with type 2 diabetes

S. VIDARSDOTTIR, P.A.M. SMEETS, D.L. EICHELSCHEIM, M.J.P. VAN OSCH, M.A. VIERGEVER, J.A. ROMIJN, J. VAN DER GROND, AND H. PLIJL 2547

IMMUNOLOGY AND TRANSPLANTATION

In vivo cytotoxicity of insulin-specific cd8⁺ T-cells in HLA*A0201 transgenic NOD mice

I. JARCHUM, J.C. BAKER, T. YAMADA, T. TAKAKI, M.P. MARRON, D.V. SERREZE, AND T.P. DILORENZO 2551



DIAEAZ 56(10) 2417-2652 (2007)
ISSN 0012-1797

Table of contents continues on page vii. ➤

ISLET STUDIES	
Essential role for signal transducer and activator of transcription-1 in pancreatic β -cell death and autoimmune type 1 diabetes of nonobese diabetic mice	
S. KIM, H.S. KIM, K.W. CHUNG, S.H. OH, J.W. YUN, S.-H. IM, M.-K. LEE, K.-W. KIM, AND M.-S. LEE	2561
β -Cell mitochondria exhibit membrane potential heterogeneity that can be altered by stimulatory or toxic fuel levels	
J.D. WIKSTROM, S.M. KATZMAN, H. MOHAMED, G. TWIG, S.A. GRAF, E. HEART, A.J.A. MOLINA, B.E. CORKEY, L. MORTOSO DE VARGAS, N.N. DANIAL, S. COLLINS, AND O.S. SHIRIHAI	2569
Interaction between Munc13-1 and RIM is critical for glucagon-like peptide-1-mediated rescue of exocytotic defects in Munc13-1-deficient pancreatic β -cells	
E.P. KWAN, L. XIE, L. SHEU, T. OHTSUKA, AND H.Y. GAISANO	2579
PATHOPHYSIOLOGY	
Meal fatty acid uptake in visceral fat in women	
S.B. VOTRUBA, R.S. MATTISON, D.A. DUMESIC, C. KOUTSARI, AND M.D. JENSEN	2589
COMPLICATIONS	
High-fat diet-induced neuropathy of pre-diabetes and obesity: effects of "healthy" diet and aldose reductase inhibition	
I.G. OBROSOVA, O. ILNYTSKA, V.V. LYZOGUBOV, I.A. PAVLOV, N. MASHTALIR, J.L. NADLER, AND V.R. DREL	2598
PHARMACOLOGY AND THERAPEUTICS	
The peroxisome proliferator-activated receptor- γ agonist pioglitazone increases number and function of endothelial progenitor cells in patients with coronary artery disease and normal glucose tolerance	
C. WERNER, C.H. KAMANI, C. GENSCH, M. BÖHM, AND U. LAUFS	2609
GENETICS	
Association of the vitamin D metabolism gene <i>CYP27B1</i> with type 1 diabetes	
R. BAILEY, J.D. COOPER, L. ZEITELS, D.J. SMYTH, J.H.M. YANG, N.M. WALKER, E. HYPPÖNEN, D.B. DUNGER, E. RAMOS-LOPEZ, K. BADENHOOP, S. NEJENTSEV, AND J.A. TODD	2616
The role of melanocortin 3 receptor gene in childhood obesity	
Y.S. LEE, L. KOK SENG POH, B. LAY KEE KEK, AND K.Y. LOKE	2622
Association study of the genetic polymorphisms of the transcription factor 7-like 2 (<i>TCF7L2</i>) gene and type 2 diabetes in the Chinese population	
Y.-C. CHANG, T.-J. CHANG, Y.-D. JIANG, S.-S. KUO, K.-C. LEE, K.C. CHIU, AND L.-M. CHUANG	2631
Variants of the transcription factor 7-like 2 (<i>TCF7L2</i>) gene are associated with type 2 diabetes in an African-American population enriched for nephropathy	
M.M. SALE, S.G. SMITH, J.C. MYCHALECKYJ, K.L. KEENE, C.D. LANGEFELD, T.S. LEAK, P.J. HICKS, D.W. BOWDEN, S.S. RICH, AND B.I. FREEDMAN	2638
A genome-wide linkage scan of insulin level-derived traits: the Amish Family Diabetes Study	
W.-C. HSUEH, K.D. SILVER, T.I. POLLIN, C.J. BELL, J.R. O'CONNELL, B.D. MITCHELL, AND A.R. SHULDINER	2643
ERRATA	
ORGANIZATION SECTION	
SI UNITS TABLE	
ONLINE LETTERS TO THE EDITOR	
http://diabetes.diabetesjournals.org	
Response to comment on: Harmancey et al. (2007) adrenomedullin inhibits adipogenesis under transcriptional control of insulin: <i>Diabetes</i> 56:553–563	
R. HARMANCEY AND F. SMIH	e18
Comment on: Buchanan (2007) (how) can we prevent type 2 diabetes? <i>Diabetes</i> 56:1502–1507	
L.S. PHILLIPS	e19