

VOLUME 57, NO. 11 DIABETES: A Journal of the American Diabetes Association®

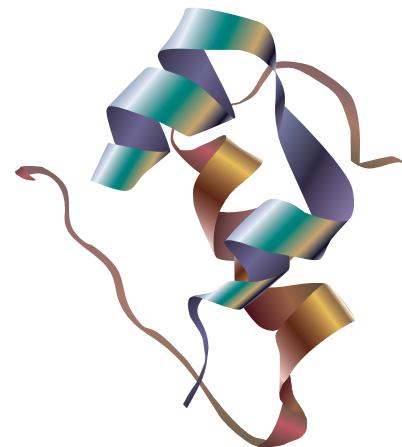
November 2008

Pages 2863–3168

diabetes

A JOURNAL OF THE
AMERICAN DIABETES
ASSOCIATION®

www.diabetes.org/diabetes



PERSPECTIVES IN DIABETES

- Viral trigger for type 1 diabetes: pros and cons
C.M. FILIPPI AND M.G. VON HERRATH 2863
- Primer: immunity and autoimmunity
M. PIETROPAOLO, J.M. SURHIGH, P.W. NELSON, AND
G.S. EISENBARTH 2872
- β-cell mass and type 1 diabetes: going, going,
gone?
E. AKIRAV, J.A. KUSHNER, AND K.C. HEROLD 2883
- Learning from molecular genetics: novel insights
arising from the definition of genes for monogenic
and type 2 diabetes
M.I. MCCARTHY AND A.T. HATTERSLEY 2889
- Islets in type 2 diabetes: in honor of Dr. Robert C.
Turner
S. BONNER-WEIR AND T.D. O'BRIEN 2899
- Human obesity: a heritable neurobehavioral
disorder that is highly sensitive to environmental
conditions
S. ORAHILLY AND I.S. FAROOQI 2905

COMMENTARIES

- Public health genomics approach to type 2
diabetes
M.J. KHOURY, R. VALDEZ, AND A. ALBRIGHT 2911
- Genes associated with risk of type 2 diabetes
identified by a candidate-wide association scan: as
a trickle becomes a flood
S.S. RICH, J.M. NORRIS, AND J.I. ROTTER 2915
- An appreciation of Robert Turner
S. ORAHILLY, G.C. WEIR, AND D.R. MATTHEWS 2918
- Big mac attack: does it play a direct role for
monocytes/macrophages in type 1 diabetes?
L.-J. YANG 2922

METABOLISM

- Type 1 diabetic Akita mouse hearts are insulin
sensitive but manifest structurally abnormal
mitochondria that remain coupled despite
increased uncoupling protein 3
H. BUGGER, S. BOUDINA, X.X. HU, J. TUINEI, V.G. ZAHA,
H.A. THEOBALD, U.J. YUN, A.P. MCQUEEN, B. WAYMENT,
S.E. LITWIN, AND E.D. ABEL 2924
- Endurance exercise as a countermeasure for aging
I.R. LANZA, D.K. SHORT, K.R. SHORT, S. RAGHAVAKAIMAL,
R. BASU, M.J. JOYNER, J.P. MCCONNELL, AND K.S. NAIR 2933

Lower intrinsic ADP-stimulated mitochondrial
respiration underlies in vivo mitochondrial
dysfunction in muscle of male type 2 diabetic
patients

- E. PHIELIX, V.B. SCHRAUWEN-HINDERLING, M. MENSINK,
E. LENAERS, R. MEEX, J. HOEKS, M.E. KOOI,
E. MOONEN-KORNIPS, J.-P. SELS, M.K.C. HESSELINK, AND
P. SCHRAUWEN 2943

Lymphocytes of type 2 diabetic women carry a
high load of stable chromosomal aberrations: a
novel risk factor for disease-related early death
B.O. BOEHM, P. MÖLLER, J. HÖGEL, B.R. WINKELMANN,
W. RENNER, S. ROSINGER, U. SELHORST, B. WELLNITZ,
W. MÄRZ, J. MELZNER, AND S. BRÜDERLEIN 2950

Ablation of AMP-activated protein kinase α2
activity exacerbates insulin resistance induced by
high-fat feeding of mice

- N. FUJII, R.C. HO, Y. MANABE, N. JESSEN, T. TOYODA,
W.L. HOLLAND, S.A. SUMMERS, M.F. HIRSHMAN, AND
L.J. GOODYEAR 2958

SIGNAL TRANSDUCTION

- Forkhead transcription factors (FoxOs) promote
apoptosis of insulin-resistant macrophages during
cholesterol-induced endoplasmic reticulum stress
T. SENOKUCHI, C.-P. LIANG, T.A. SEIMON, S. HAN,
M. MATSUMOTO, A.S. BANKS, J.-H. PAIK, R.A. DEPINHO,
D. ACCILI, I. TABAS, AND A.R. TALL 2967

OBESITY STUDIES

- Peripheral, but not central, CB1 antagonism
provides food intake-independent metabolic
benefits in diet-induced obese rats
R. NOGUEIRAS, C. VEYRAT-DUREBEX, P.M. SUCHANEK,
M. KLEIN, J. TSCHÖP, C. CALDWELL, S.C. WOODS,
G. WITTMANN, M. WATANABE, Z. LIPOSITS, C. FEKETE,
P. REIZES, F. ROHNER-JEANRENAUD, AND M.H. TSCHÖP 2977

Oxidative stress regulates adipocyte
apolipoprotein E and suppresses its expression in
obesity

- D.J. ESPIRITU AND T. MAZZONE 2992

Lack of FFAR1/GPR40 does not protect mice from
high-fat diet-induced metabolic disease

- H. LAN, L.M. HOOS, L. LIU, G. TETZLOFF, W. HU,
S.J. ABBONDANZO, G. VASSILEVA, E.L. GUSTAFSON,
J.A. HEDRICK, AND H.R. DAVIS 2999

Persistence of pre-diabetes in overweight and
obese Hispanic children: association with
progressive insulin resistance, poor β-cell
function, and increasing visceral fat

- M.I. GORAN, C. LANE, C. TOLEDO-CORRAL, AND
M.J. WEIGENSBERG 3007

IMMUNOLOGY AND TRANSPLANTATION		GENETICS
Targeting CD22 reprograms B-cells and reverses autoimmune diabetes P. FIORINA, A. VERGANI, S. DADA, M. JUREWICZ, M. WONG, K. LAW, E. WU, Z. TIAN, R. ABDI, I. GULERIA, S. RODIG, K. DUNUSSI-JOANNOPOULOS, J. BLUESTONE, AND M.H. SAYEGH	3013	Common missense variant in the glucokinase regulatory protein gene is associated with increased plasma triglyceride and C-reactive protein but lower fasting glucose concentrations M. ORHO-MELANDER, O. MELANDER, C. GUIDUCCI, P. PEREZ-MARTINEZ, D. CORELLA, C. ROOS, R. TEWHEY, M.J. RIEDER, J. HALL, G. ABECASIS, E.S. TAI, C. WELCH, D.K. ARNETT, V. LYSENKO, E. LINDHOLM, R. SAXENA, P.I.W. DE BAKKER, N. BURTT, B.F. VOIGHT, J.N. HIRSCHHORN, K.L. TUCKER, T. HEDNER, T. TUOMI, B. ISOMAA, K.-F. ERIKSSON, M.-R. TASKINEN, B. WAHLSTRAND, T.E. HUGHES, L.D. PARNELL, C.-Q. LAI, G. BERGLUND, L. PELTONEN, E. VARTIAINEN, P. JOUSILAHTI, A.S. HAVULINNA, V. SALOMAA, P. NILSSON, L. GROOP, D. ALTSCHULER, J.M. ORDOVAS, AND S. KATHIRESAN
Increased expression of CCL2 in insulin-producing cells of transgenic mice promotes mobilization of myeloid cells from the bone marrow, marked insulitis, and diabetes A.P. MARTIN, S. RANKIN, S. PITCHFORD, I.F. CHARO, G.C. FURTADO, AND S.A. LIRA	3025	3112
ISLET STUDIES		Predicting type 2 diabetes based on polymorphisms from genome-wide association studies: a population-based study M. VAN HOEK, A. DEHGHAAN, J.C.M. WITTEMAN, C.M. VAN DULJIN, A.G. UITTERLINDEN, B.A. OOSTRA, A. HOFMAN, E.J.G. SJIBRANDS, AND A.C.J.W. JANSENS
Cytokine-induced β-cell death is independent of endoplasmic reticulum stress signaling M.C. ÅKERFELDT, J. HOWES, J.Y. CHAN, V.A. STEVENS, N. BOUBENNA, H.M. MCGUIRE, C. KING, T.J. BIDEN, AND D.R. LAYBUTT	3034	3122
Small interfering RNA-mediated suppression of proislet amyloid polypeptide expression inhibits islet amyloid formation and enhances survival of human islets in culture L. MARZBAN, A. TOMAS, T.C. BECKER, L. ROSENBERG, J. OBERHOLZER, P.E. FRASER, P.A. HALBAN, AND C.B. VERCHERE	3045	Assessing the combined impact of 18 common genetic variants of modest effect sizes on type 2 diabetes risk H. LANGO, THE U. K. TYPE 2 DIABETES GENETICS CONSORTIUM, C.N.A. PALMER, A.D. MORRIS, E. ZEGGINI, A.T. HATTERSLEY, M.J. MCCARTHY, T.M. FRAYLING, AND M.N. WEEDON
Lessons from the first comprehensive molecular characterization of cell cycle control in rodent insulinoma cell lines I. COZAR-CASTELLANO, G. HARB, K. SELK, K. TAKANE, R. VASAVADA, B. SICARI, B. LAW, P. ZHANG, D.K. SCOTT, N. FIASCHI-TAESCH, AND A.F. STEWART	3056	3129
β-cell proliferation, but not neogenesis, following 60% partial pancreatectomy is impaired in the absence of FoxM1 A. ACKERMANN MISFELDT, R.H. COSTA, AND M. GANNON	3069	Comprehensive association study of type 2 diabetes and related quantitative traits with 222 candidate genes K.J. GAULTON, C.J. WILLER, Y. LI, L.J. SCOTT, K.N. CONNEELY, A.U. JACKSON, W.L. DUREN, P.S. CHINES, N. NARISU, LL. BONNYCASTLE, J. LUO, M. TONG, A.G. SPRAU, E.W. PUGH, K.F. DOHENY, T.T. VALLE, G.R. ABECASIS, J. TUOMILEHTO, R.N. BERGMAN, F.S. COLLINS, M. BOEHNKE, AND K.L. MOHLKE
PATHOPHYSIOLOGY		Fat mass- and obesity-associated (<i>FTO</i>) gene variant is associated with obesity: longitudinal analyses in two cohort studies and functional test L. QI, K. KANG, C. ZHANG, R.M. VAN DAM, P. KRAFT, D. HUNTER, C.-H. LEE, AND F.B. HU
Plasma YKL-40: a BMI-independent marker of type 2 diabetes A.R. NIELSEN, C. ERIKSTRUP, J.S. JOHANSEN, C.P. FISCHER, P. PLOMGAARD, R. KROGH-MADSEN, S. TAUDORF, B. LINDEGAARD, AND B.K. PEDERSEN	3078	3145
COMPLICATIONS		Two single nucleotide polymorphisms identify the highest-risk diabetes HLA genotype: potential for rapid screening J.M. BARKER, T.M. TRIOLI, T.A. ALY, E.E. BASCHAL, S.R. BABU, A. KRETOWSKI, M.J. REWERS, AND G.S. EISENBARTH
Diffusion tensor imaging identifies deficits in white matter microstructure in subjects with type 1 diabetes that correlate with reduced neurocognitive function C.T. KODI, D.T. FRANC, J.P. RAO, F.S. ANDERSON, W. THOMAS, B.A. MUELLER, K.O. LIM, AND E.R. SEAQUIST	3083	3152
High glucose induces toll-like receptor expression in human monocytes: mechanism of activation M.R. DASU, S. DEVARAJ, L. ZHAO, D.H. HWANG, AND I. JIALAL	3090	PCLO variants are nominally associated with early-onset type 2 diabetes and insulin resistance in Pima Indians L. MA, R.L. HANSON, L.N. QUE, Y. GUO, S. KOBES, C. BOGARDUS, AND L.J. BAIER
Transplantation of bone marrow-derived mesenchymal stem cells improves diabetic polyneuropathy in rats T. SHIBATA, K. NARUSE, H. KAMIYA, M. KOZAKAE, M. KONDO, Y. YASUDA, N. NAKAMURA, K. OTA, T. TOSAKI, T. MATSUKI, E. NAKASHIMA, Y. HAMADA, Y. OISO, AND J. NAKAMURA	3099	3156
Association of organochlorine pesticides with peripheral neuropathy in patients with diabetes or impaired fasting glucose D.H. LEE, D.R. JACOBS, JR., AND M. STEFFES	3108	Population-specific risk of type 2 diabetes conferred by <i>HNF4A</i> P2 promoter variants: a lesson for replication studies I. BARROSO, J. LUAN, E. WHEELER, P. WHITTAKER, J. WASSON, E. ZEGGINI, M.N. WEEDON, S. HUNT, R. VENKATESH, T.M. FRAYLING, M. DELGADO, R.J. NEUMAN, J. ZHAO, R. SHERVA, B. GLASER, M. WALKER, G. HITMAN, M.I. MCCARTHY, A.T. HATTERSLEY, M.A. PERMUTT, N.J. WAREHAM, AND P. DELOUKAS

ERRATUM

ORGANIZATION SECTION

ONLINE LETTERS TO THE EDITOR

<http://diabetes.diabetesjournals.org>

Comment on: Hosogai et al. (2007) adipose tissue hypoxia in obesity and its impact on adipocytokine dysregulation. *Diabetes* 56:901–911, 2007

M.R. NEGRÃO, R. MONTEIRO, C. CALHAU, R. SOARES, AND
I. AZEVEDO

e15

About the American Diabetes Association

The American Diabetes Association 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. The American Diabetes Association 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 the American Diabetes Association: Call 1-800-806-7801 or log on to www.diabetes.org/membership

To subscribe to American Diabetes Association journals: Call 1-800-342-2383 or go to www.diabetesjournals.org

To order American Diabetes Association books: Call 1-800-232-6733 or log on to <http://store.diabetes.org>

To access ADA's library of professional resources: Go to <http://professional.diabetes.org>

For more information about diabetes or ADA programs and services: Call 1-800-342-2383. E-mail: AskADA@diabetes.org or log on to www.diabetes.org

To locate an ADA/NCQA Recognized Provider of quality diabetes care in your area: Visit <http://web.ncqa.org>

To find an ADA Recognized Education Program in your area: Call 1-800-342-2383 or go to www.diabetes.org/for-health-professionals-and-scientists/recognition/edrecognition.jsp

To join the fight to increase funding for diabetes research, end discrimination, and improve insurance coverage: Call 1-800-342-2383 or visit www.diabetes.org/advocacy-and-legalresources/advocacy.jsp

To find out how you can get involved with the programs in your community: Call 1-800-342-2383 or visit <http://www.diabetes.org/communityprograms-and-localevents.jsp>

To find out about an important research project regarding type 2 diabetes: Log on to www.diabetes.org/diabetes-research/research-home.jsp

To obtain information on making a planned gift or charitable bequest: Call 1-888-700-7029 or visit www.wpg.cc/stl/CDA/homepage/1,1006,509,00.html

To make a donation or memorial contribution: Call 1-800-342-2383 or visit www.diabetes.org/support-the-cause/make-a-donation.jsp