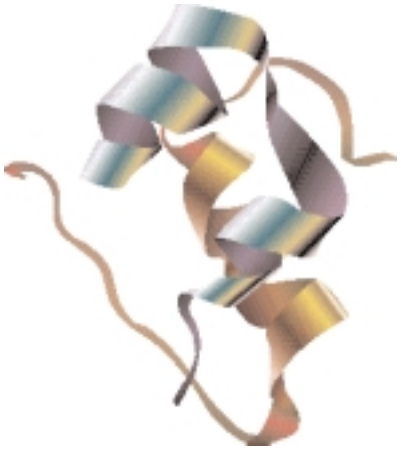
diabetes

A JOURNAL OF THE AMERICAN DIABETES ASSOCIATION®

www.diabetes.org/diabetes



PERSPECTIVES IN DIABETES

Organizing glucose disposal: emerging roles of the glycogen targeting subunits of protein phosphatase-1
C.B. NEWGARD, M.J. BRADY, R.M. O'DOHERTY, AND A.R. SALTIEL 1967

RAPID PUBLICATIONS

Activation of glucose transport by AMP-activated protein kinase via stimulation of nitric oxide synthase
L.G.D. FRYER, E. HAJDUCH, F. RENCUREL, I.P. SALT, H.S. HUNDAL, D.G. HARDIE, AND D. CARLING 1978

Baculovirus-mediated gene transfer into pancreatic islet cells
L. MA, N. TAMARINA, Y. WANG, A. KUZNETSOV, N. PATEL, C. KENDING, B.J. HERING, AND L.H. PHILIPSON 1986

IMMUNOLOGY AND TRANSPLANTATION

Early graft failure of xenogeneic islets in NOD mice is accompanied by high levels of interleukin-1 and low levels of transforming growth factor-β mRNA in the grafts
C.A. GYSEMANS, M. WAER, D. VALCKX, J.M. LAUREYS, D. MIHKALSKY, R. BOUILLON, AND C. MATHIEU 1992

Suppression and acceleration of autoimmune diabetes by neutralization of endogenous interleukin-12 in NOD mice
K. FUJIHIRA, M. NAGATA, H. MORIYAMA, H. YASUDA, K. ARISAWA, M. NAKAYAMA, S. MAEDA, M. KASUGA, K. OKUMURA, H. YAGITA, AND K. YOKONO 1998

Interferon-γ receptor signaling is dispensable in the development of autoimmune type 1 diabetes in NOD mice
D.V. SERREZE, C.M. POST, H.D. CHAPMAN, E.A. JOHNSON, B. LU, AND P.B. ROTHMAN 2007

ISLET STUDIES

Dehydroepiandrosterone sulfate and β-cell function: enhanced glucose-induced insulin secretion and altered gene expression in rodent pancreatic β-cells
J.S. DILLON, G.C. YANEY, Y. ZHOU, N. VOILLEY, S. BOWEN, S. CHIPKIN, C.R. BLISS, V. SCHULTZ, F.C. SCHUIT, M. PRENTKI, D.J. WAXMAN, AND B.E. CORKEY 2012

Recombinant human betacellulin promotes the neogenesis of β-cells and ameliorates glucose intolerance in mice with diabetes induced by selective alloxan perfusion
K. YAMAMOTO, J. MIYAGAWA, M. WAGURI, R. SASADA, K. IGARASHI, M. LI, T. NAMMO, M. MORIWAKI, A. IMAGAWA, K. YAMAGATA, H. NAKAJIMA, M. NAMBA, Y. TOCHINO, T. HANAFUSA, AND Y. MATSUZAWA 2021

Differential patterns of glucose-induced electrical activity and intracellular calcium responses in single mouse and rat pancreatic islets
C.M. ANTUNES, A.P. SALGADO, L.M. ROSÁRIO, AND R.M. SANTOS 2028

Hedgehog signaling regulation of insulin production by pancreatic β-cells
M.K. THOMAS, N. RASTALSKY, J.H. LEE, AND J.F. HABENER 2039

Subcellular localization, mobility, and kinetic activity of glucokinase in glucose-responsive insulin-secreting cells
M. STUBBS, S. AISTON, AND L. AGIUS 2048

β-Cell glucokinase deficiency and hyperglycemia are associated with reduced islet amyloid deposition in a mouse model of type 2 diabetes
S. ANDRIKOPOULOS, C.B. VERCHERE, Y. TERAUCHI, T. KADOWAKI, AND S.E. KAHN 2056

PATHOPHYSIOLOGY

Mechanism by which metformin reduces glucose production in type 2 diabetes
R.S. HUNDAL, M. KRSSAK, S. DUFOUR, D. LAURENT, V. LEBON, V. CHANDRAMOULI, S.E. INZUCCHI, W.C. SCHUMANN, K.F. PETERSEN, B.R. LANDAU, AND G.I. SHULMAN 2063

Overexpression of glutamine:fructose-6-phosphate amidotransferase in the liver of transgenic mice results in enhanced glycogen storage, hyperlipidemia, obesity, and impaired glucose tolerance
G. VEERABABU, J. TANG, R.T. HOFFMAN, M.C. DANIELS, L.F. HEBERT JR., E.D. CROOK, R.C. COOKSEY, AND D.A. MCCLAIN 2070

Effects of skyrin, a receptor-selective glucagon antagonist, in rat and human hepatocytes
J.C. PARKER, R.K. MCPHERSON, K.M. ANDREWS, C.B. LEVY, J.S. DUBINS, J.E. CHIN, P.V. PERRY, B. HULIN, D.A. PERRY, T. INAGAKI, K.A. DEKKER, K. TACHIKAWA, Y. SUGIE, AND J.L. TREADWAY 2079

Paradoxical effect of troglitazone in normal animals: enhancement of adipocyte but reduction of liver insulin sensitivity
M.K. DEA, G.W. VAN CITTERS, M. ADER, S.D. MITTELMAN, A.L. SUNEHAG, AND R.N. BERGMAN 2087

A high fasting plasma insulin concentration predicts type 2 diabetes independent of insulin resistance: evidence for a pathogenic role of relative hyperinsulinemia
C. WEYER, R.L. HANSON, P.A. TATARANNI, C. BOGARDUS, AND R.E. PRATLEY 2094

Impaired oxidation of plasma-derived fatty acids in type 2 diabetic subjects during moderate-intensity exercise
E.E. BLAAK, D.P.C. VAN AGGEL-LEIJSSEN, A.J.M. WAGENMAKERS, W.H.M. SARIS, AND M.A. VAN BAAK 2102

Table of contents continues on page iv

DIAEAZ 49(12) 1967–2230
ISSN 0012-1797

Thiazolidinediones inhibit the expression of β_3-adrenergic receptors at a transcriptional level
E. BAKOPANOS AND J.E. SILVA 2108

Longitudinal compensation for fat-induced insulin resistance includes reduced insulin clearance and enhanced β-cell response
S.D. MITTELMAN, G.W. VAN CITTERS, S.P. KIM, D.A. DAVIS, M.K. DEA, M. HAMILTON-WESSLER, AND R.N. BERGMAN 2116

A model to explore the interaction between muscle insulin resistance and β-cell dysfunction in the development of type 2 diabetes
F. MAUVAIS-JARVIS, A. VIRKAMAKI, M.D. MICHAEL, J.N. WINNAY, A. ZISMAN, R.N. KULKARNI, AND C.R. KAHN 2126

Prandial glucose effectiveness and fasting gluconeogenesis in insulin-resistant first-degree relatives of patients with type 2 diabetes
M.F. NIELSEN, B. NYHOLM, A. CAUMO, V. CHANDRAMOULI, W.C. SCHUMANN, C. COBELLI, B.R. LANDAU, R.A. RIZZA, AND O. SCHMITZ 2135

Pharmacokinetics and pharmacodynamics of subcutaneous injection of long-acting human insulin analog glargine, NPH insulin, and ultralente human insulin and continuous subcutaneous infusion of insulin lispro
M. LEPORE, S. PAMPANELLI, C. FANELLI, F. PORCELLATI, L. BARTOCCI, A. DI VINCENZO, C. CORDONI, E. COSTA, P. BRUNETTI, AND G.B. BOLLI 2142

Impaired in vivo stimulation of lipolysis in adipose tissue by selective β_2-adrenergic agonist in obese adolescent girls
S. ENOKSSON, M. TALBOT, F. RIFE, W.V. TAMBORLANE, R.S. SHERWIN, AND S. CAPRIO 2149

Exercise and thiazolidinedione therapy normalize insulin action in the obese Zucker fatty rat
A.L. HEVENER, D. REICHART, AND J. OLEFSKY 2154

COMPLICATIONS

Native and modified LDL activate extracellular signal–regulated kinases in mesangial cells
A.J. JENKINS, V. VELARDE, R.L. KLEIN, K.C. JOYCE, K.D. PHILLIPS, R.K. MAYFIELD, T.J. LYONS, AND A.A. JAFFA 2160

Defective intracellular antioxidant enzyme production in type 1 diabetic patients with nephropathy
A. CERIELLO, A. MOROCUTTI, F. MERCURI, L. QUAGLIARO, M. MORO, G. DAMANTE, AND G.C. VIBERTI 2170

Diabetes in the Goto-Kakizaki rat is accompanied by impaired insulin-mediated myosin-bound phosphatase activation and vascular smooth muscle cell relaxation
O.A. SANDU, L. RAGOLIA, AND N. BEGUM 2178

GENETICS

APOE polymorphisms and the development of diabetic nephropathy in type 1 diabetes: results of case-control and family-based studies
S. ARAKI, D.K. MOCZULSKI, L. HANNA, L.J. SCOTT, J.H. WARRAM, AND A.S. KROLEWSKI 2190

A common promoter variant of the leptin gene is associated with changes in the relationship between serum leptin and fat mass in obese girls
C. LE STUNFF, C. LE BIHAN, N.J. SCHORK, AND P. BOUGNÈRES 2196

EPIDEMIOLOGY

Parental transmission of type 2 diabetes: the Framingham Offspring Study
J.B. MEIGS, L.A. CUPPLES, AND P.W.F. WILSON 2201

Intrauterine exposure to diabetes conveys risks for type 2 diabetes and obesity: a study of discordant sibships
D. DABELEA, R.L. HANSON, R.S. LINDSAY, D.J. PETTITT, G. IMPERATORE, M.M. GABIR, J. ROUMAIN, P.H. BENNETT, AND W.C. KNOWLER 2208

BRIEF GENETICS REPORTS

Further evidence for a susceptibility locus for type 2 diabetes on chromosome 20q13.1–q13.2
T. KLUPA, M.T. MALECKI, M. PEZZOLESI, L. JI, S. CURTIS, C.D. LANGEFELD, S.S. RICH, J.H. WARRAM, AND A.S. KROLEWSKI 2212

Non–class II HLA gene associated with type 1 diabetes maps to the 240-kb region near *HLA-B*
S. NEJENTSEV, Z. GOMBOS, A.-P. LAINE, R. VEIJOLA, M. KNIP, O. SIMELL, O. VAARALA, H.K. ÅKERBLOM, AND J. ILONEN 2217

Cd36 and molecular mechanisms of insulin resistance in the stroke-prone spontaneously hypertensive rat
M. COLLISON, A.M. GLAZIER, D. GRAHAM, J.J. MORTON, M.H. DOMINICZAK, T.J. AITMAN, J.M.C. CONNELL, G.W. GOULD, AND A.F. DOMINICZAK 2222

ORGANIZATION SECTION

SI UNITS TABLE

2000 SUBJECT AND AUTHOR INDEXES

DECEMBER AUTHOR INDEX (Volume 49, Number 12)

Ader, M., 2087
Agius, L., 2048
Aiston, S., 2048
Aitman, T.J., 2222
Åkerblom, H.K., 2217
Andrews, K.M., 2079
Andrikopoulos, S., 2056
Antunes, C.M., 2028
Araki, S., 2190
Arisawa, K., 1998

Bakopanos, E., 2108
Bartocci, L., 2142
Begum, N., 2178
Bennett, P.H., 2208
Bergman, R.N., 2087, 2116
Blaak, E.E., 2102
Bliss, C.R., 2012
Bogardus, C., 2094
Bolli, G.B., 2142
Bougnères, P., 2196
Bouillon, R., 1992
Bowen, S., 2012
Brady, M.J., 1967
Brunetti, P., 2142

Caprio, S., 2149
Carling, D., 1978
Caumo, A., 2135
Ceriello, A., 2170
Chandramouli, V., 2063, 2135
Chapman, H.D., 2007
Chin, J.E., 2079
Chipkin, S., 2012
Cobelli, C., 2135
Collison, M., 2222
Connell, J.M.C., 2222
Cooksey, R.C., 2070
Cordoni, C., 2142
Corkey, B.E., 2012
Costa, E., 2142
Crook, E.D., 2070
Cupples, L.A., 2201
Curtis, S., 2212

Dabelea, D., 2208
Damante, G., 2170
Daniels, M.C., 2070
Davis, D.A., 2116
Dea, M.K., 2087, 2116
Dekker, K.A., 2079
Di Vincenzo, A., 2142
Dillon, J.S., 2012
Dominiczak, A.F., 2222
Dominiczak, M.H., 2222
Dubins, J.S., 2079
Dufour, S., 2063

Enoksson, S., 2149

Fanelli, C., 2142
Fryer, L.G.D., 1978
Fujihira, K., 1998

Gabir, M.M., 2208
Glazier, A.M., 2222
Gombos, Z., 2217
Gould, G.W., 2222
Graham, D., 2222
Gysemans, C.A., 1992

Habener, J.F., 2039
Hajduch, E., 1978
Hamilton-Wessler, M., 2116
Hanafusa, T., 2021
Hanna, L., 2190
Hanson, R.L., 2094, 2208
Hardie, D.G., 1978
Hebert, Jr., L.F., 2070
Hering, B.J., 1986
Hevener, A.L., 2154
Hoffman, R.T., 2070
Hulin, B., 2079
Hundal, H.S., 1978
Hundal, R.S., 2063

Igarashi, K., 2021
Ilonen, J., 2217
Imagawa, A., 2021
Imperatore, G., 2208
Inagaki, T., 2079
Inzucchi, S.E., 2063

Jaffa, A.A., 2160
Jenkins, A.J., 2160
Ji, L., 2212
Johnson, E.A., 2007
Joyce, K.C., 2160

Kadowaki, T., 2056
Kahn, C.R., 2126
Kahn, S.E., 2056
Kasuga, M., 1998
Kending, C., 1986
Kim, S.P., 2116
Klein, R.L., 2160
Klupa, T., 2212
Knip, M., 2217
Knowler, W.C., 2208
Krolewski, A.S., 2190, 2212
Krssak, M., 2063
Kulkarni, R.N., 2126
Kuznetsov, A., 1986

Laine, A.-P., 2217
Landau, B.R., 2063, 2135
Langefeld, C.D., 2212
Laurent, D., 2063
Laureys, J.M., 1992
Le Bihan, C., 2196
Le Stunff, C., 2196
Lebon, V., 2063
Lee, J.H., 2039
Lepore, M., 2142
Levy, C.B., 2079
Li, M., 2021
Lindsay, R.S., 2208
Lu, B., 2007
Lyons, T.J., 2160

Ma, L., 1986
Maeda, S., 1998
Malecki, M.T., 2212
Mathieu, C., 1992
Matsuzawa, Y., 2021
Mauvais-Jarvis, F., 2126
Mayfield, R.K., 2160
McClain, D.A., 2070
McPherson, R.K., 2079
Meigs, J.B., 2201
Mercuri, F., 2170
Michael, M.D., 2126
Mihkalsky, D., 1992
Mittelman, S.D., 2087, 2116
Miyagawa, J., 2021
Moczulski, D.K., 2190
Moriwaki, M., 2021
Moriyama, H., 1998
Moro, M., 2170
Morocutti, A., 2170
Morton, J.J., 2222

Nagata, M., 1998
Nakajima, H., 2021
Nakayama, M., 1998
Namba, M., 2021
Nammo, T., 2021
Nejentsev, S., 2217
Newgard, C.B., 1967
Nielsen, M.F., 2135
Nyholm, B., 2135

O'Doherty, R.M., 1967
Okumura, K., 1998
Olefsky, J., 2154

Pampanelli, S., 2142
Parker, J.C., 2079
Patel, N., 1986
Perry, D.A., 2079
Perry, P.V., 2079
Petersen, K.F., 2063
Pettitt, D.J., 2208
Pezzolesi, M., 2212
Philipson, L.H., 1986
Phillips, K.D., 2160
Porcellati, F., 2142
Post, C.M., 2007
Pratley, R.E., 2094
Prentki, M., 2012

Quagliaro, L., 2170

Ragolia, L., 2178
Rastalsky, N., 2039
Reichart, D., 2154
Rencurel, F., 1978
Rich, S.S., 2212
Rife, F., 2149
Rizza, R.A., 2135
Rosário, L.M., 2028
Rothman, P.B., 2007
Roumain, J., 2208

Salgado, A.P., 2028
Salt, I.P., 1978
Saltiel, A.R., 1967
Sandu, O.A., 2178
Santos, R.M., 2028
Saris, W.H.M., 2102
Sasada, R., 2021
Schmitz, O., 2135
Schork, N.J., 2196
Schuit, F.C., 2012
Schultz, V., 2012
Schumann, W.C., 2063, 2135
Scott, L.J., 2190
Serreze, D.V., 2007
Sherwin, R.S., 2149
Shulman, G.I., 2063
Silva, J.E., 2108
Simell, O., 2217
Stubbs, M., 2048
Sugie, Y., 2079
Sunehag, A.L., 2087

Tachikawa, K., 2079
Talbot, M., 2149
Tamarina, N., 1986
Tamborlane, W.V., 2149
Tang, J., 2070
Tataranni, P.A., 2094
Terauchi, Y., 2056
Thomas, M.K., 2039
Tochino, Y., 2021
Treadway, J.L., 2079

Vaarala, O., 2217
Valckx, D., 1992
van Aggel-Leijssen, D.P.C., 2102
van Baak, M.A., 2102
Van Citters, G.W., 2087, 2116
Veerababu, G., 2070
Veijola, R., 2217
Velarde, V., 2160
Verchere, C.B., 2056
Viberti, G.C., 2170
Virkamaki, A., 2126
Voilley, N., 2012

Waer, M., 1992
Wagenmakers, A.J.M., 2102
Waguri, M., 2021
Wang, Y., 1986
Warram, J.H., 2190, 2212
Waxman, D.J., 2012
Weyer, C., 2094
Wilson, P.W.F., 2201
Winnay, J.N., 2126

Yagita, H., 1998
Yamagata, K., 2021
Yamamoto, K., 2021
Yaney, G.C., 2012
Yasuda, H., 1998
Yokono, K. 1998

Zhou, Y., 2012
Zisman, A., 2126