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ABBREVIATIONS AND SYMBOLS

%E	percent of total energy
˚C	degree Celsius
μg	microgram
μl	microliter
μm	micrometer
μM	micromolar
4-AAP	4-aminoantipyrine
Aβ	amyloid β
Acyl-CoA	acetyl-coenzyme A
ACOD	acyl-CoA oxidase
ACS	acyl-CoA synthase
AD	Alzheimer's disease
AGEs	advanced glycation end-products
Akt	serine/threonine protein kinase
AMP	adenosine 5' monophosphate

Akt	serine/threonine protein kinase
AMP	adenosine 5’ monophosphate
AMPA	α-amino-3-hydroxy-5-methylisoxazole-4-propionic acid
ATP	adenosine 5’ triphosphate
BBB	blood brain barrier
BHT	butyrated hydroxytoluene
BMI	body mass index
BSA	bovine serum albumin
BW	body weight
Ca^{2+}	calcium
CaM	calmodulin
CAT	catalase
CBB	Coomassie Brilliant Blue
CNS	central nervous system
CO_2	carbondioxide
CoA	coenzyme A
Da	dalton
DAP	dihydroxyacetone phosphate

dl	deciliter
DTNB	5, 5’-dithiobis (2-nitrobenzoic acid)
EDTA	ethylene diamine tetraacetic acid
EGTA	ethylene glycol tetraacetic acid
eNOS	endothelial nitric oxide synthase
Fe	iron
FFA	free fatty acid
g	gram
GE neuron	glucose-excited neuron
GI neuron	glucose-inhibited neuron
GK	glycerolkinase
GLIA	glial cell
GLUT	glucose transporter
GOD	glucose oxidase
GPO	glycerol-3-P-oxidase
GPx	glutathione peroxidase
Grb2	growth factor receptor-bound protein 2
GSH	reduced glutathione

H&E	hematoxylin and eosin
H_2O_2	hydrogen peroxide
H_3PO_4	phosphoric acid
HDL	high-density lipoprotein
HFD	high-fat diet
HFS	high-fat, high-sucrose
HOMA	homeostasis model assessment
HPLC	high performance liquid chromatography
HRP	horseradish peroxidase
IDDM	insulin-dependent diabetic mellitus
IL-6	interleukin-6
iNOS	inducible nitric oxide synthase
IRS	insulin receptor substrate
JNK	c-Jun N-terminal kinase
kcal	kilocalories
kDa	kilodalton
KH_2PO_4	potassium dihydrogen phosphate
L-NAME	N^{ω}-nitro-L-arginine methyl ester

LTD	long term depression
LTP	long term potentiation
MAPK	mitogen-activated protein kinase
MDA	malondialdehyde
MEHA	3-methyl-N-ethyl-N-(β-hydrooxyethyl)-aniline
mg	milligram
ml	milliliter
mm	millimeter
mM	millimolar
mRNA	messenger RNA
NADPH	reduced nicotinamide adenine dinucleotide phosphate
NaCl	Sodium chloride
NaF	Sodium fluoride
ND	normal diet
NEFA	non-esterified fatty acid
NF-κB	nuclear factor-kappa B
ng	nanogram
NGS	normal goat serum

N-GSN	non-glucose-sensing neuron
nm	nanometer
nM	nanomolar
nNOS	neuronal nitric oxide synthase
NO	nitric oxide
NOS	nitric oxide synthase
NOS-1	neuronal nitric oxide synthase
NOS-2	inducible nitric oxide synthase
NOS-3	endothelial nitric oxide synthase
NP	nonyl phenoxypolyethoxylethanol
NTS	nucleus tractus solitarii
$O_2^{\bullet-}$	superoxide anion
$ONOO^{\bullet-}$	peroxynitrite
PD	Parkinson's disease
PDK1	3-phosphoinositide dependent protein kinase-1
PI3K	phosphoinositide-3 kinase
PIP_2	phosphatidylinositol 4,5-bisphosphate
PIP_3	phosphatidylinositol 3,4,5-triphosphate

PKB	protein kinase B
PKC	protein kinase C
POD	peroxidase
PPi	pyrophosphoric acid
PNS	peripheral nervous system
PTB	phosphotyrosine-binding
PTEN	phosphatase and tensin homolog deleted on chromosome 10
r	Correlation coefficient
RMT	receptor-mediated transcytosis
RNS	reactive nitrogen species
ROS	reactive oxygen species
rpm	rounds per minute
Ser	serine residue
Ser/Thr	serine/threonine
sGC	soluble guanylate cyclase
SH	sulfhydryl
SH2	Src homology 2
Shc	SH2-domain containing protein

SOD	superoxide dismutase
SOS	Son of sevenless homolog
STZ	streptozotocin
TBA	thiobarbituric acid
TBARS	thiobarbituric acid reactive substances
TCA	trichloroacetic acid
TEP	1, 1, 3, 3-tetramethoxypropane
TG	triglyceride
TMB	3, 3', 5, 5'-tetramethylbenzidine
TNB	5-thio-2-nitrobenzoic acid
TNF-α	tumor necrosis factor-alpha
WKY	Wistar-Kyoto
VF	visceral fat
VMH	ventromedial hypothalamus