
LIST OF ABBREVIATIONS

A	:	Acini tissues
α -Cell	:	Alpha cell
ADP	:	Adenosine-5-diphosphate
ALT	:	Alanine aminotransferase
4-AP	:	4- aminophenazone
AST	:	Aspartate aminotransferase
ATP	:	Adenosine triphosphate
β -cell	:	Beta cell
BSA	:	Bovine serum albumin
CAT	:	Catalase
cDNA	:	Complementary deoxyribonucleic acid
CHE	:	Cholesterol esterase
CHOD	:	Cholesterol oxidase
COX-2	:	Cyclooxygenase-2
CYP450	:	Cytochrome P450
CYP2E1	:	Cytochrome P450 2E1
CT	:	Threshold cycle
CV	:	Central vein
DAP	:	Dihydroxy acetone phosphate
DM	:	Diabetes mellitus
DNA	:	Deoxyribonucleic acid
DTNB	:	5, 5'- dithiobis-(2-nitrobenzoic acid)
FFA	:	Free fatty acids
FPG	:	Fasting plasma glucose
GCL	:	γ -glutamylcysteine ligase
GDM	:	Gestational diabetes mellitus

GK	: Glycerol kinas
GlcNAc	: N-acetyl glucosamine
GLUT2	: Glucose transporter 2
GOD	: Glucose oxidase
GOT	: Glutamate oxaloacetate transaminase
G3P	: Glycerol-3-phosphate
GPO	: Glycerol phosphate dehydrogenase
GPT	: Glutamate pyruvate transaminase
GPx	: Glutathione peroxidase
GS	: Glutathione synthetase
GSH	: Gluthatione
GST	: Glutathion-S-transferases
HBA1c	: Hemoglobin A1c
HC	: Hepatocytes
HDL	: High density lipoprotein
HGP	: Hepatic glucose production
HMP	: Hexose monophosphate
HPA	: Hypothalamic-pituitary-adrenal
H ₂ O ₂	: Hydrogen peroxide
IGT	: Impaired glucose tolerance
IDDM	: Insulin-dependent diabetes mellitus
IFG	: Impaired fasting glucose
INOS	: Inducible nitric oxide synthase
IRs	: Insulin receptors
KC	: kupffer cells
K ₃ EDTA	: Potassium ethylene diamine tetraacetic acid
L	: Langerhans
LDL	: Low density lipoprotein

LDH	: Lactate dehydrogenase
LPL	: Lipoprotein lipase
MDA	: Malondialdehyde
MDH	: Malate dehydrogenase
mRNA	: Messenger ribonucleic acid
NADPH	: Nicotinamide adenine dinucleotide phosphate reduced
NK	: Natural killer
NIDDM	: Non-insulin-dependent diabetes mellitus
NFκB	: Nuclear factor kappa B
NO	: Nitric oxide
OD	: Optical density
OFRs	: Oxygen free radicals
PG	: Post load glucose
PIIINP	: Amino terminal propeptide
POD	: Peroxidase
PPARγ	: Peroxisome proliferator-activated receptors gamma
PPD	: Protopanaxadiol
PPT	: Protopanaxatriol
PS`	: Phosphatidyl serine
β –ME	: β –Mercaptoethanol
RCT	: Randomized clinical trial
RNA	: Ribonucleic acid
ROS	: Reactive oxygen species
S	: Second
SDS	: Sodium dodecyle sulfate
SOD	: Superoxide dismutase
STZ	: Streptozotocin
TBA	: Thiobarbituric acid

TCA	:	Trichloro-acetic acid
T1D	:	Type 1 diabetes mellitus
T2D	:	Type 2 diabetes mellitus
TG	:	Triglycerides
TLC	:	Thin layer chromatography
TMP	:	Tetramethoxy propane
RT-PCR	:	Real time Polymerase chain reaction
WR	:	Working reagent