Role of Some Growth Factors and Oxidative Stress in the Pathogenesis of Diabetic Retinopathy

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List of Abbreviations

ADP: Adenosine-5`-diphosphate

AGEs: Advanced glycation end-products

ALR: Aldose reductase

Ang II: Angiotensin –II

ATP: Adenosine -5`-triphosphate

BMI: Body mass index

BUN: Blood urea nitrogen

cAMP: Cyclic adenosine-5`- monophosphate

CE: Cholesterol esterase

CO_x: Cholesterol oxidase

CRVO: Central retinal vein occlusion

CTGF: Connective tissue growth factor

Cu-Zn-SOD: Copper and zinc containing superoxide dismutase

DAG: Diacylglycerol

DCCT: Diabetes control and complications trial

DHAP: Dihydroxy acetone phosphate

DM: Diabetes mellitus

DME: Diabetic macular edema

DR: Diabetic retinopathy

ECM: Extracellular matrix

ECSOD: Extracellular superoxide dismutase

eNO: Endothelium derived nitric oxide

ELISA: Enzyme linked-immuno-sorbent assay

ERMs: Epiretinal membranes

ETDRS: Early treatment diabetic retinopathy study

Fe-SOD:	Iron containing superoxide dismutase
FGF-4:	Fibroblast growth factor-4
Flk-1:	Fetal like kinase-1
Flt-1:	Fms-like tyrosine kinase-1
GAPDH:	Glyceraldehyde-3-phosphate dehydrogenase
GC:	Good glycemic control
GFAT:	Glutamine: fructose 6 phosphate amidotransferase
GK:	Glycerol kinase
GLUT-1:	Glucose transporter-1
GO:	Glucose oxidase
GPO:	Glycerylphosphate oxidase
GSH:	Reduced glutathione
GSSG:	Oxidized glutathione (glutathione disulfide)
GTP:	Guanine-5`-triphosphate
HbA_1c:	Glycated hemoglobin
HbA_o:	Non-glycosylated hemoglobin
HDL-C:	High density lipoprotein cholesterol
HGF:	Hepatocyte growth factor
HIF:	Hypoxia-inducible factor
HMP:	Hexosamine monophosphate
HRP:	Streptavidin-peroxidase
ICAM:	Intercellular adhesion molecule
IGF:	Insulin like growth factor
IL:	Interleukin
iNOS:	Inducible nitric oxide synthase
IRMA :	Intra-retinal microvasculature abnormalities
KGF:	Keratinocyte growth factor

LCF: Lipid clearing factor

LDL-C: Low density lipoprotein cholesterol

MCP-1: Monocyte chemotactic protein-1

MMPs: Matrix metalloproteases

Mn-SOD: Manganese containing superoxide dismutase

Na_2EDTA: Disodium ethylene diamine tetra acetic acid

NADPH: Nicotinamide dinucleotide phosphate

NBT: Nitroblue tetrazolium

NF-*κ*B: Nuclear factor kappa beta

NO: Nitric oxide

NPDR: Non-proliferative diabetic retinopathy

$O_2^{\cdot-}$: Superoxide anion

$OH^{\cdot}$: Hydroxyl radical

OxLDL: Oxidized low density lipoprotein

PARP: Poly adenosine-5`-diphosphate ribose polymerase

PC: Poor glycemic control

PDGF: Platelet derived growth factor

PDR: Proliferative diabetic retinopathy

PEDF: Pigment epithelium derived factor

PGI2: Prostacyclin

p-HBS: Para-hydroxybenzene sulfonate

PI3: Phosphatidylinositol

PIGF: Placenta growth factor

PKC: Protein kinase C

PLC_γ: Phospholipase C_gamma

PMS: Phenazine methosulphate

POD: Peroxidase

PPDR:	Pre-proliferative diabetic retinopathy
PVR:	Proliferative vitreoretinopathy
RAGE:	Receptor for advanced glycation end products
RAS:	Rennin angiotensin system
ROP:	Retinopathy of prematurity
ROS:	Reactive oxygen species
RRD:	Rhegmatogenous retinal detachment
SDH:	Sorbitol dehydrogenase
S.E.M:	Standard error of mean
s- VCAM-1:	Soluble form of vascular cell adhesion molecule
SOD:	Superoxide dismutase
TC:	Total cholesterol
TG:	Triglycerides
TGF-b:	Transforming growth factor-beta
TMB:	Tetramethyl benzidine
TNF-α:	Tumor necrosis factor-alpha
UKPDS:	United Kingdom prospective diabetes study
VA:	Visual acuity
VCAM:	Vascular cell adhesion molecule
VEGF:	Vascular endothelial growth factor
VEGFR-1:	Vascular endothelial growth factor receptor-1
VEGFR-2:	Vascular endothelial growth factor receptor-2
VLDL:	Very Low Density Lipoprotein
VSMC:	Vascular smooth muscle cells
WESDR:	Wisconsin epidemiologic study of diabetic retinopathy

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