

## List of abbreviations

ABI = Ankle-brachial index  
AC = Adenylyl cyclase  
ADMs = Adrenomedullins  
ADSCs = Adipose tissue-derived stem cells  
AFM = Atomic force microscopy  
AFP = Antifreeze proteins  
AH = Anti-Hem  
ALDH = Aldehyde dehydrogenases  
AMI = Acute myocardial infarction  
ANR = Anterior neural ridge  
AP = Anterior-posterior  
APs = Apical progenitors  
APC = Antigen-presenting complexes  
ASCs = Adult stem cells  
ASCs = Adipose-derived stem cells  
AVE = Anterior visceral endoderm  
bFGF = Basic fibroblast growth factor  
BLBP = Brain lipid-binding protein  
BM = Bone marrow  
BMCs = Bone marrow cells  
BMMNCs = Bone marrow mononuclear cells  
BMPs = Bone morphogenetic proteins  
BMSCs = Bone-marrow-derived stem cells  
CABG = Coronary artery bypass graft  
cADMP = Cyclic adenosine monophosphate  
CAR = Coronary artery reserve  
CCR2 = C-C motif chemokine receptor 2  
Cdk5 = Cyclin-dependent kinase 5  
CECs = Corneal endothelial cells  
CGRP = Calcitonin gene related peptide  
Cip/Kip = Interacting protein/kinase inhibitory protein  
CK1 = Casein kinase-1  
CLI = Critical limb ischemia  
CLRs = Calcitonin-receptor like receptors  
CNS = Central nervous system  
CNTF = Ciliary neurotrophic factor  
CP = Choroid plexus  
CPCs = Cardiac progenitor cells  
CSC = Cancer stem cells  
CSCs = Cardiac stem cells  
CVCs = Calcifying vascular cells  
Cx43 = Connexin 43 (Cx43)  
DG = Dentate gyrus  
DHH = Desert Hedgehog  
DMSO = Dimethyl sulfoxide  
DSBs = Double-stranded breaks

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DV = Dorsoventral  
ECs = Endothelial cells  
ECM = Extracellular matrix  
EGF = Epidermal growth factor  
EMT = Epithelial mesenchymal transition  
ENO = Enolase  
EPCs = Endothelial progenitor cells  
ER = Endoplasmic reticulum  
ERK = Extracellular signal-related kinase  
ESCs = Embryonic stem cells  
FD = Force-distance  
FGF = Fibroblast growth factor  
FGFR = Fibroblast growth factor receptor  
FG2 = Fibroblast growth factor-2  
FM = Force-maps  
FU = Fused  
Fz = Frizzled  
GAPDH = Glyceraldehyde 3-phosphate dehydrogenase  
GCSF = Granulocyte colony stimulating factor  
GE = Ganglionic eminences  
GFAP = Glial fibrillary acidic protein  
GPCR = GTP-binding protein coupled receptor  
GPCRs = G-protein coupled receptors  
GRES = Growth hormone response elements  
Gro = Groucho  
GSK3 = Glycogen synthase kinase-3  
HAEC = Human aortic endothelial cells  
HAS = Human serum albumin  
hCE = Human corneal endothelium  
hESCs = Human embryonic stem cells  
HGF = Hepatocyte growth factor  
HIF-1 $\alpha$  = Hypoxia-inducible factor-1 $\alpha$   
HIF-1 $\beta$  = Hypoxia-inducible factor-1 $\beta$   
HLA-DR = Human leukocyte antigen-DR isotype  
hMSC = Human mesenchymal stromal/stem cells  
hPSCs = Human pluripotent stem cells  
HRE = Hypoxia response element  
HSCs = Hematopoietic stem cells  
HSPG = Heparin sulfate proteoglycans  
HUVECs = Human umbilical vein endothelial cells  
IBP = Ice-binding proteins  
IDP = Intrinsically disordered proteins IDP  
IFN- $\gamma$  = Interferon- $\gamma$   
IGF-1 = Insulin-like growth factor-1  
IGF2 = Insulin-like growth factor-2  
IHD = Ischemic heart disease  
IHH = Indian Hedgehog  
IL = Interleukin  
IL-6 = Interleukin-6  
IL1 $\beta$  = Interleukin-1 $\beta$

IMD = Intermedin  
 iPSCs = Induced pluripotent stem cells  
 IRS-1 = Insulin receptor substrate 1  
 ISCT = International Society for Cellular Therapy  
 ISP = Ice-structuring proteins  
 LC = Lung cancer  
 LDL = Low-density lipoprotein  
 LF = Left-right  
 LGR5 = Leucine-rich-repeat-containing G-protein coupled receptor 5  
 LIF = Leukemia inhibitory factor  
 LSCs = Limbal stem cells  
 LSCD = Limbal stem cells deficiency  
 LV = Left ventricle  
 LVEDV = Left ventricular end diastolic volume  
 LVEF = Left ventricle ejection fraction  
 LVESV = Left ventricular end systolic volume  
 MAPC = Multipotent adult progenitor cells  
 MAPK = Mitogen-activated protein kinase  
 MCP-1 = Monocyte chemoattractant protein-1  
 MDR = High levels of multidrug resistance  
 MDSC = Muscle-derived stem cells  
 MGE = Medial ganglionic eminence  
 MHC-II = Major histocompatibility complex class II  
 MIDCAB = Minimally invasive coronary artery bypass  
 MLHF = Minnesota Living with Heart Failure  
 MM = Malignant mesothelioma  
 mMSCs = Native mouse mesenchymal stromal/stem cells or human  
 MNC = Mononuclear cell  
 MOF = Metal-organic frameworks  
 MSC = Mesenchymal stromal/stem cells  
 MVs = Microvesicles  
 NC = Neural crest  
 NF-kB = Nuclear factor kappa B  
 NG1 = Neurogenesis-1  
 NG2 = Neuron-glia 2  
 NOS3 = Nitric oxide synthase 3  
 NSCs = Neural crest cells  
 NSCLC = Non-small cell lung cancer  
 NYHA = New York Heart Association  
 OPCs = Oligodendrocyte precursor cells  
 OPS = Open pulled straws  
 OSVZ = Outer SVZ progenitors  
 $\gamma$ H2AX = Phosphorylated histone H2A  
 PBMC = Peripheral blood mononuclear cell  
 PCI = Percutaneous coronary intervention  
 PDGF = Platelet-derived growth factor  
 PDGF-BB = Platelet-derived growth factor-BB  
 PDGFR- $\beta$  = Platelet-derived growth factor receptor beta  
 PEG = Polyethylene glycol  
 PGD2 = Prostaglandin D2

PGK = Phosphoglycerate kinase  
PGM = Phosphohoglycomutase  
PHD = Prolyl hydroxylases  
PKA = Protein kinase A  
PKM2 = Pyruvate kinase m2 isoform  
PIGF = Placental growth factor  
pMN = Motor neuron progenitors  
PORT = Postoperative radiotherapy  
PSC = Pluripotent stem cells  
Ptch = Patched  
PV = Parvalbumin expressed cells  
PVP = Polyvinylpyrrolidone  
RADMsPs = Receptor activity modifying proteins  
RGPs = Radial glial progenitors  
ROCK = Rho kinase  
ROS = Reactive oxygen species  
RPCT = Randomized placebo-controlled clinical trials  
SDF-1 = Stromal cell-derived factor-1  
SGZ = Subgranular zone  
SHH = Sonic Hedgehog  
SIRS = Systemic inflammatory response syndrome  
SkMs = Skeletal myoblasts  
SMA- $\alpha$  = Smooth muscle actin alpha  
SMCs = Smooth muscle cells  
Smo = Smoothened  
S1P = Sphingosine-1-phosphate  
SST = Somatostatin  
SUFP = Suppressor of FU  
SVZ = Subventricular zone  
TB4 = Thymosin-4  
TcPO<sub>2</sub> = Transcutaneous oxygen pressure  
TGF- $\alpha$  = Transforming growth factor- $\alpha$   
TGF- $\beta$  = Transforming growth factor-beta  
3d = Three-dimensional  
3G5 = O-sialoganglioside  
THP/F = Thermal hysteresis proteins/factors  
TNF = Tumor necrosis factor  
TNF $\alpha$  = Tumor necrosis factor  $\alpha$   
TNTs = Tunneling nanotubes  
TRAIL = Tumor necrosis factor-related apoptosis-inducing ligand  
TREs = Thyroid response elements  
TSP1 = Thrombospondin-1  
UCB = Umbilical cord blood  
UCSCs = Umbilical cord stem cells  
VEGF = Vascular endothelial growth factor  
VESL = Very small embryonic-like stem cells  
vHL = von Hippel-Lindau  
VSMCs = Vascular smooth muscle cells  
WNT = Wingless/integrated