

MESENCHYMAL STEM/STROMAL CELLS

Markers and Differentiation

Cord Blood
EBF1/3, REX1,
sICAM-1,
Osteopontin

Umbilical Cord
CD95, FLT1, GABRB3,
NANOG, SYNPO2

Adipose Tissue
CD49d, CD51, SPARC
TGFβ1, CBX8

Bone Marrow
CD50, CD80, CD106,
CD146, CD166, CD200,
GD2, PDGFRα

Positive Markers
CD73, CD90, CD105

Negative Markers
CD14, CD11b, CD19,
CD79α, CD34, CD45, HLA-DR

Mesenchymal Stem/Stromal Cell (MSC)

Smooth muscle cell
Calponin, α-Smooth muscle actin

Adipocyte
Adiponectin, FABP4,
Leptin, PPAR-γ2

Chondrocyte
SOX9, Aggrecan,
Collagen IV, Collagen II, CD151

Cardiac muscle cell
Atrial natriuretic factor,
Desmin, NKX2.5, TBX5,
Troponin T

Osteocyte
Alkaline phosphatase,
Fibronectin,
RUNX2/CBFA1,
Osteocalcin

Pancreatic cell
ISLET1, PDX-1,
PAX6, NKX6.1,
NEUROG-3

Mesodermal Differentiation

Endothelial cell
VE-Cadherin, CD31/PECAM-1,
TIE-2, VEGFR2/KDR

Hepatic cell
Albumin, α1-Antitrypsin,
CD26, TAT

Neural cell
Nestin, SOX2,
Vimentin,
β3 Tubulin,
GFAP, OLIG2

Trans Differentiation