

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

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

Hepatic cell
Albumin, α1-Antitrypsin,
CD26, TAT

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

Mesodermal Differentiation

Trans Differentiation

