

Stem Cells

Where lineage begins

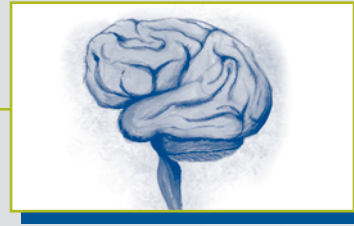
Embryonic Stem Cells

BRIX
 CD9
 Claudin 6
 COMMD3
 Cripto
 DIAPH2
 DNMT3B
 DPPA5
 FGF-4
 FOXD3
 GABRB3
 Galanin
 GBX2
 GDF-3
 GJA1
 GRB7
 IFITM1
 IFITM2
 IL6ST
 IMP-2
 Lefty A
 Lefty B
 LIF R [mouse]
 LIN28
 LIN41
 Nanog
 Noggin
 NR5A2
 NR6A1
 Numb
 Podocalyxin
 Oct-3/4 (POU5F1)
 PTEN
 REST
 Rex1
 SCF R /Kit
 Semaphorin 3A
 sFRP2
 SOX2
 TERT
 TFCEP2L1
 UTF1

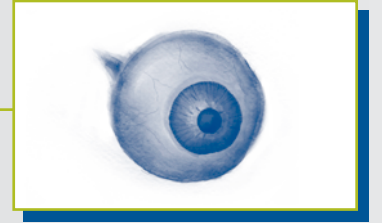
Ectoderm

CRABP2
 GFAP
 HLXB9
 ISL1
 MAP2
 MSI1
 Nestin
 NeuroD1
 Olig-2
 PAX6
 SOX1
 Synaptophysin
 TH
 TUBB3
 Vimentin

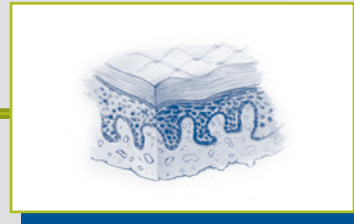
Brain



Eyes



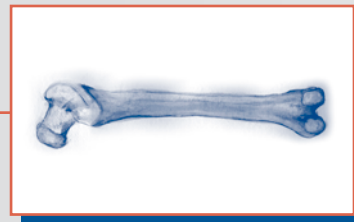
Skin



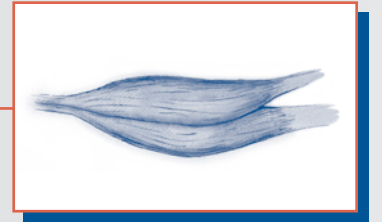
Mesoderm

α -Actin
 CBFA1
 Brachyury
 VE-Cadherin
 CD31
 CD34
 Collagen I
 Collagen II
 Desmin
 HAND1
 Hemoglobin β
 Hemoglobin ζ
 HLXB9
 MSX1
 MYF5
 NPPA
 VEGF R1
 WT1

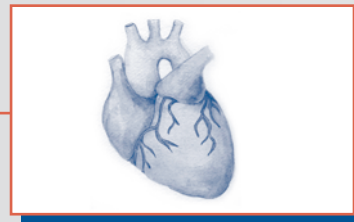
Bones



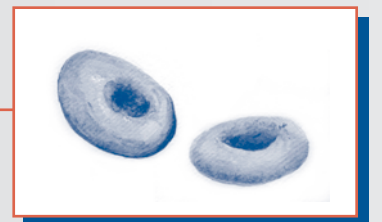
Muscles



Heart



Erythrocytes



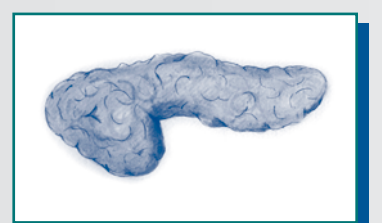
Kidneys



Endoderm

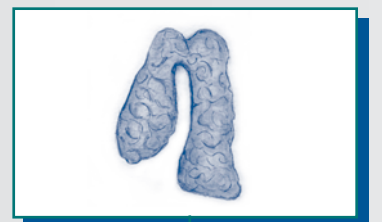
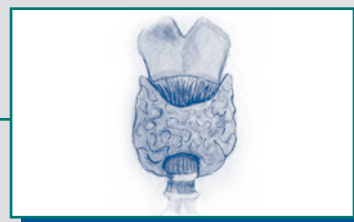
Activin RIB
 α -Fetoprotein
 Amylase α 2B
 BMP-2
 Cerebrus
 Decorin
 FABP2
 FGF-8
 Fibronectin 1
 FOXA2
 GATA-4
 GATA-6
 Glucagon
 H19
 HHEX
 HNF4A
 IAPP
 Insulin
 Laminin α 1
 Laminin β 1
 Laminin γ 1
 LHX1
 Nodal
 Otx2
 PAX-4
 PDHX
 PTF1A
 Serpin-A1
 Smad2
 SOX17
 Somatostatin
 TAT
 Wnt-3

Liver



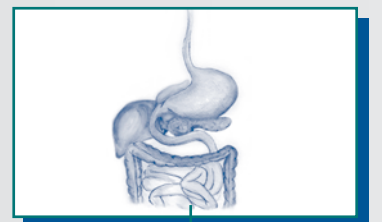
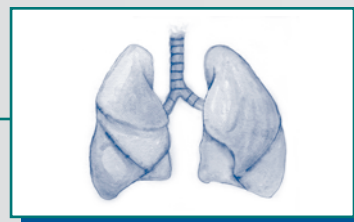
Pancreas

Thyroid



Thymus

Lung



Digestive Tract

Trophoblast

CDX2
 EOMES
 GCM1
 KRT1

Germ Cells

DDX4
 IFITM1
 IFITM2
 Stella
 SYCP3

Note: This poster conveys a general overview and should not be considered comprehensive nor definitive. The details are understood to be subject to interpretation.
 REFERENCES
 1. Chiu, A. & M.S. Rao, eds. (2003) *Human Embryonic Stem Cells*, Humana Press.
 2. Brandenberger, R. (2004) *BMC Dev. Biol.* 4:10.
 3. Ginis, I. et al. (2004) *Dev. Biol.* 269:360.
 R&D Systems would like to thank Dr. Mahendra S. Rao (Stem Cell Biology Unit, Laboratory of Neurosciences, National Institute on Aging, Baltimore, MD) for his contribution to the content of this poster.