

Stem Cells from Heart

Cardiac Stem cells → different species

- Self renewal
- Clonogenicity
- Multipotentiality

⊗ Involuntary

human heart → pool of Cardiac stem cells compartment.

Stem Cell

- C-Kit
 - OCT3/4
 - SOX2
 - KLF4
 - CMYC
- Stem Cells

Niche homeostasis

↓
disturbed

CVD → Heart failure

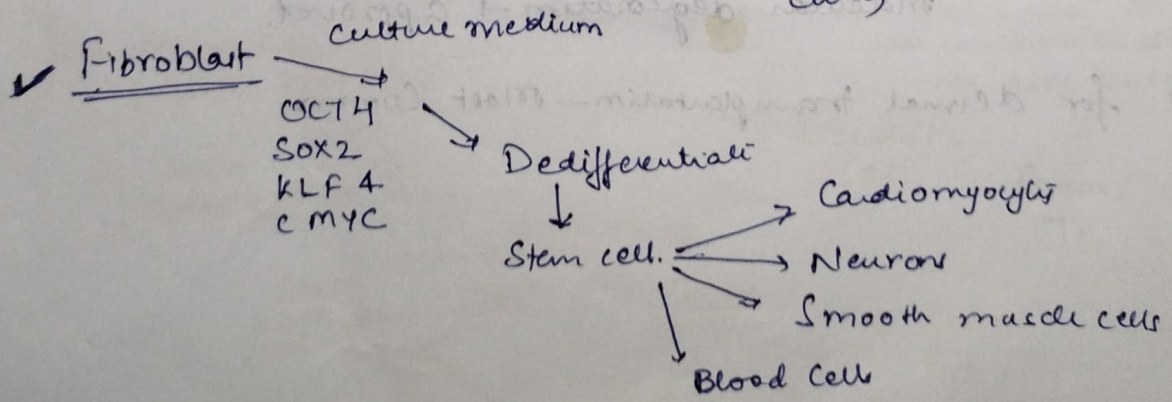
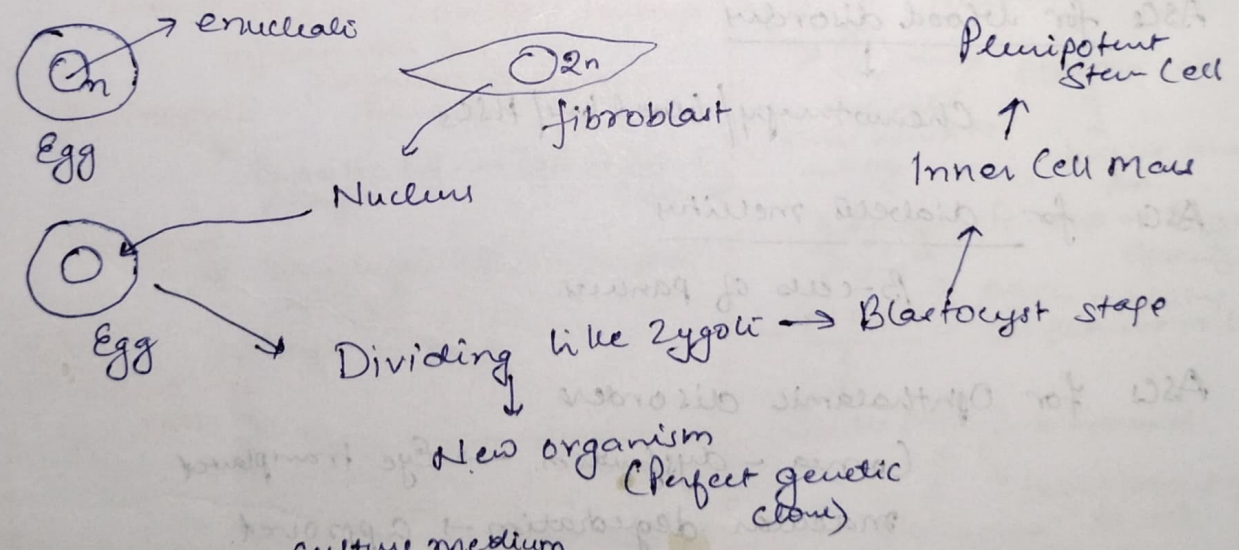
Maintenance of Stemness

Therapeutic effects are observed in cardiac stem cell transplantation

Induced pluripotent Stem Cells

✓ Somatic Cell Nuclear Transfer

Derivation of iPSC



Control teratoma formation
Pace control → Arrhythmia

ASC therapy for neurogenesis

Neural progenitors / Stem cell

↓
neurogenic niches

Adult mammalian brain

1) Subventricular zone → lines the lateral ventricle

2) Subgranular zone

Hippocampal lobe

Tremendous application

induced pluripotent stem cell

Neuroblast

↓
Neuron

ASC for stroke

MSCs / HSCs

↓
iPSCs → cell of your choice

ASCs for blood disorders

↓
Chemotherapy / blood loss / HSCs

ASC for diabetes mellitus

β-cells of pancreas

ASCs for Ophthalmic disorders

Cornea - dysfunction → Eye transplanted

macular degeneration → approved

ASCs for dermal transplantation - Most Common