

[CH.10&36]

Cell Potency is a cell's ability to differentiate into other cell types
 Totipotent is a cell that gives rise to any tissue in an organism
 Pluripotent is a cell that gives rise to any cells in an organism

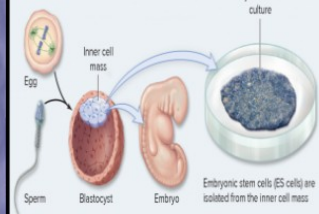
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Once sperm cell and egg cell have joined, cell cleavage produces a blastocyst. The inner cell mass of the blastocyst develops into the human embryo.



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Embryonic Stem Cells are a form of pluripotent cells that are from an embryo
 Inducible Pluripotent cells are stem cells that give rise to embryonic stem cells

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Human Reproductive vs. Therapeutic Cloning

Reproductive cloning

- Goal is to produce a clonal embryo to implant in a mother's womb with intent to carry the child to birth.

Therapeutic cloning

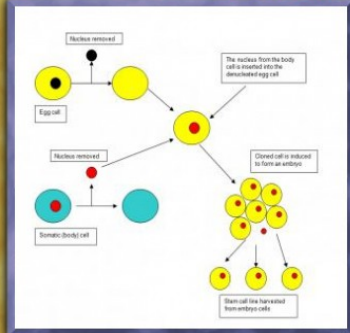
- Goal is to produce a clonal embryo to generate embryonic stem cells.
- ES cells can be used to treat clonal donor without risk of immune rejection.

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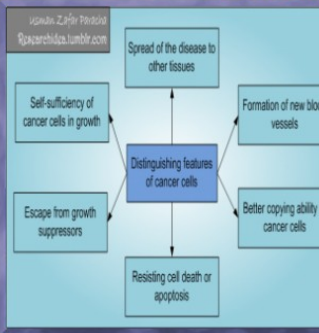
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Nuclear Reprogramming can be used for therapeutic cloning

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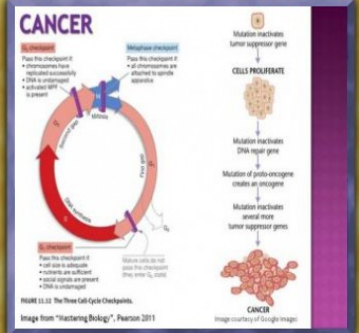
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Cancer cells don't die by apoptosis, they just continue to divide uncontrollably

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