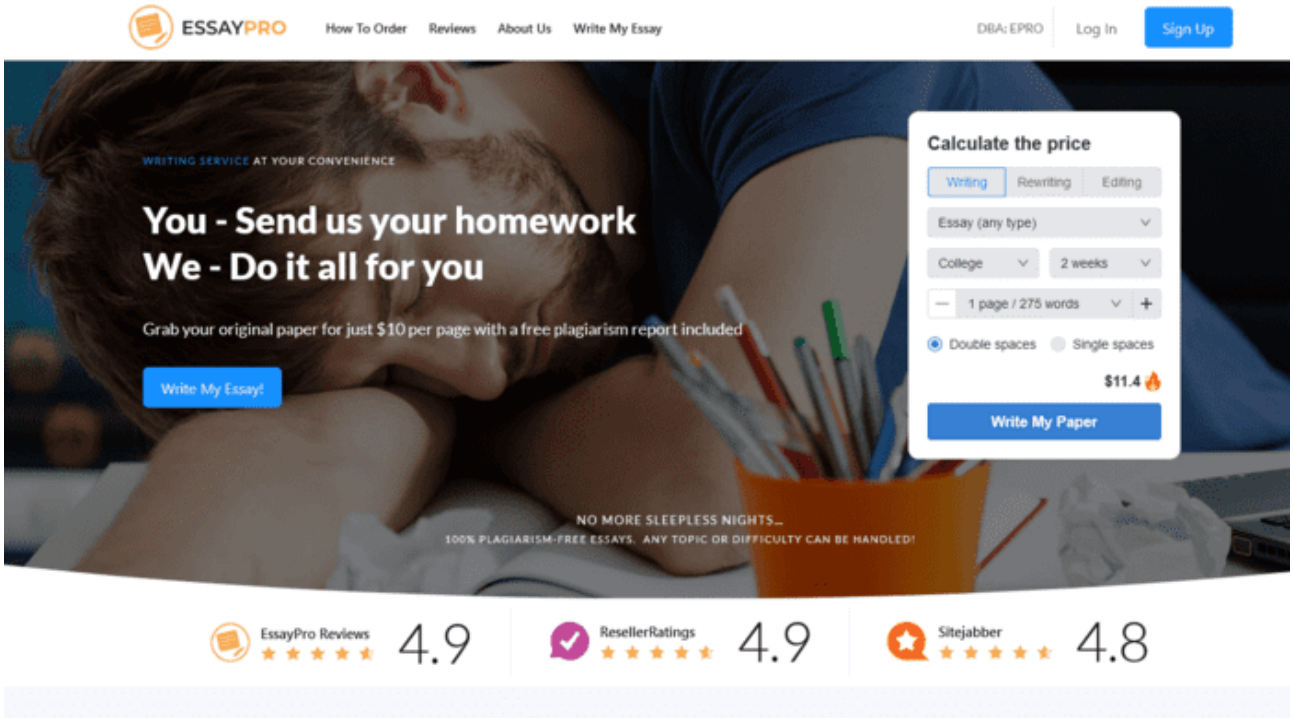
Technology Ethic: Stem Cells



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Technology Ethic: Stem Cells

Stem Cell:

Stem cells can be thought of as blank slates or cells that have yet to become specialized. They can be transformed to become cells with special functions.

History/Background of Stem Cells:

In the mid 1960's, R. G. Edwards and colleagues at Cambridge University began studying differentiation of rabbit embryonic cells in an artificial environment. They manipulated these embryonic cells into specific types of form such as connective tissue and muscle neurons.

Richard Gardner, a graduate student of R. G. Edwards, had furthered the experiment with mice blastocoels. As a result, human blast cysts became available since R. G. Edwards' laboratory in the early 1980s.

In 1986, Peter Hollands, another graduate student of Edwards, demonstrated that mouse embryonic stem cells could colonize and repair damaged tissues of the haematopoietic system in adult mice.

In 1998, James Thomson and colleagues at the University of Wisconsin successfully isolated and grew human embryonic stem cells. At John Hopkins University, John Gearhart successfully isolated human germ cells.

From 1999 to 2000, researchers continued to manipulated cells from adult mouse tissues.

Types Of Stem Cells:

Stem cells can be classified into tree main types:

oEmbryonic Stem (ES) Cells

oEmbryonic Germ (EG) Cells

oAdult Stem (AS) Cells

Embryonic Stem Cell:

ES cells are undifferentiated cells derived from the inner cell mass of the blast cyst. They are the original cells of our body tissues. ES cells have the potential to transform into 200 different specialized cell types.

Human embryonic stem cells are derived from fertilized embryos which are less than a week old. In November of...

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...ind. A young woman paralyzed in a car accident now can move her legs and toes as a result of having her own immune system cells injected into her spinal cord. Two children born without immune systems now have functioning ones because of a bone-marrow stem cell treatment. After analyzing stem cell development, I feel that research on ES cells should be stopped because of the many risks involved. Whereas the research on AS cells should carry on for it opposes no hazard to anyone.

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