

Research Report

MUNISH '12



Please think about the environment and do not print this research report unless absolutely necessary.



Forum: Economic and Social Council (ECOSOC)

Issue: The question of stem cell research

Student Officer: Allard van Duijn

Position: Deputy President of ECOSOC, MUNISH 2012

Introduction

The creation of embryonic stem cells for medical purposes remains a subject of controversy. Those opposed claim it to be immoral to terminate possible human life for the purpose of creating stem cells. Yet others claim that the possible medical gains outweigh any ethical objections. For many this is a dilemma between two moral principles: respecting the value of human life, or respecting the value of medical research possibly saving many more human lives. In the case of embryonic stem cell research, these principles cannot be respected at the same time.

However as stem cell research progressed over the course of time, it is now possible to avoid the cloning of human embryos altogether, thus solving the ethical issues associated with stem cell research.

Definition of Key Terms

Embryonic stem cells

Often referred to as HESC (Human Embryonic Stem Cells), embryonic stem cells are cells extracted from 4-5 day old human embryos. An important characteristic of embryonic stem cells is their ability to differentiate into any type of cell.

Adult stem cells (somatic)

These are derived from the organs of a completely developed human. Adult stem cells are more limited than embryonic stem cells in the sense that they can only differentiate into a selection of human cells.

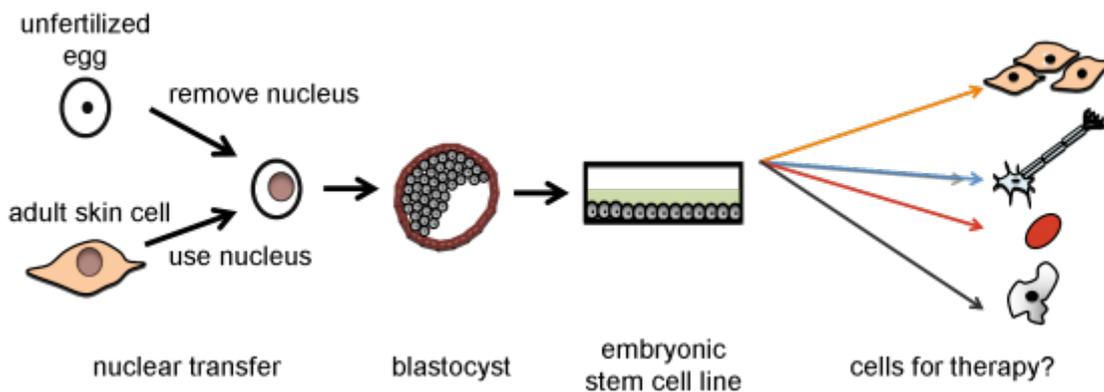
Induced pluripotent stem cells

These are adult stem cells altered to be like embryonic stem cells.

General Overview

Therapeutic cloning

Therapeutic cloning is about creating an embryonic stem cell line for medical purposes. It is done by a technique called somatic cell nuclear transfer (SCNT). This would involve removing DNA from an embryo and then replacing it with DNA from an individual. The embryo would then be implanted into a woman's uterus to grow for a few days. After that, stem cells can be extracted, allowing for the production of human organs, skin, nerve tissue etc.



□

What are stem cells good for?

Several nations' National Institutes of Health have claimed stem cells to be of potential use in treating diseases such as diabetes, Parkinson's disease, traumatic spinal cord injury, Duchene's muscular dystrophy, heart disease and vision and hearing loss.

Timeline of Events

Date	Description of event
1908	Russian histologist Alexander Maksimov introduced the term "stem cell"
1978	Stem cells discovered in human cord blood
1995	First embryonic stem cell line derived from a primate
1997	Lamb cloned from stem cells
1998	First human stem cell line derived at the University of Wisconsin–Madison by James Thomson and coworkers
November, 2007	Human induced pluripotent stem cells
11 October 2010	Embryonic stem cells are tried in humans for the first time

2011 Production of first stem cells from endangered species, could save animals in danger of extinction

UN involvement, Relevant Resolutions, Treaties and Events

- [UN divided on stem cell research](#) (March 2, 2005)
-

Evaluation of Previous Attempts to Resolve the Issue

In 2005 the United Nations legal committee debated on stem cell research and reproductive cloning; 71 nations voted in favor of banning all cloning, however 35 members voted against because the proposal would also include a ban on therapeutic cloning. 43 nations abstained, making the measure fail.

Possible Solutions

Stem cell research doesn't require the cloning of human embryos anymore.

Induced pluripotent stem cells

Induced pluripotent stem cells are equivalent to embryonic stem cells; yet their production doesn't require the use of any embryos.

Using existing embryos / surplus embryos from fertility treatment

This way research doesn't account for extra embryos being produced, thus avoiding any ethical issues.

Bibliography

- Harrison, Hayley. "What Are Umbilical Cord Stem Cells?" *EHow*. Demand Media, 01 Apr. 2010. Web. 24 Aug. 2012. <http://www.ehow.com/facts_6173537_umbilical-cord-stem-cells_.html>.
- "How It Is Done; Possible Benefits." *Therapeutic Cloning* -. N.p., n.d. Web. 21 Aug. 2012. <http://www.religioustolerance.org/clo_ther.htm>.

"Pregnancy Info HOME." *Pregnancy-Info.net*. N.p., n.d. Web. 28 Aug. 2012.

<http://www.pregnancy-info.net/stemcell/therapeutic_vs_reproductive.html>.

"Reprogramming: How to Turn Any Cell of the Body into a Pluripotent Stem Cell | Europe's Stem Cell Hub | EuroStemCell." *EuroStemCell*. N.p., n.d. Web. 22 Sept. 2012.

<<http://www.eurostemcell.org/factsheet/reprogramming-how-turn-any-cell-body-pluripotent-stem-cell>>.

"Romney on Stem Cell Research." *Romney on Stem Cell Research*. N.p., n.d. Web. 23 Aug. 2012.

<<http://2012.republican-candidates.org/Romney/Stem-Cell.php>>.

"Sources of Human Embryonic Stem Cells: Embryos and Stem Cell Research | Europe's Stem Cell Hub | EuroStemCell." *EuroStemCell*. N.p., n.d. Web. 22 Aug. 2012.

<<http://www.eurostemcell.org/factsheet/origins-ethics-and-embryos-sources-human-embryonic-stem-cells>>.

"Stem Cell." *Wikipedia*. Wikimedia Foundation, 21 Aug. 2012. Web. 21 Aug. 2012.

<http://en.wikipedia.org/wiki/Stem_cell>.

"UN Divided on Stem Cell Research." *UN Divided on Stem Cell Research*. N.p., n.d. Web. 27

Aug. 2012. <<http://news.stanford.edu/news/2005/march2/med-undivided-030205.html>>.

"What Are Stem Cells?" *Medical News Today*. MediLexicon International, 01 Feb. 0032. Web. 29

Aug. 2012. <http://www.medicalnewstoday.com/info/stem_cell/>.