Stem Cells Harvested from Human Cadaver

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***Abstract*—Stem cells are a very popular subject, and very controversial. Finding non-controversial sources of stem cells is always something people are looking for, and a new source has emerged with promising result. Members of the University of Miami are investigating the use of mesenchymal stem cells (MSCs) found in the bone marrow of cadavers. There are also stem cells that could be made from the fibroblasts in the skin of human cadavers.**

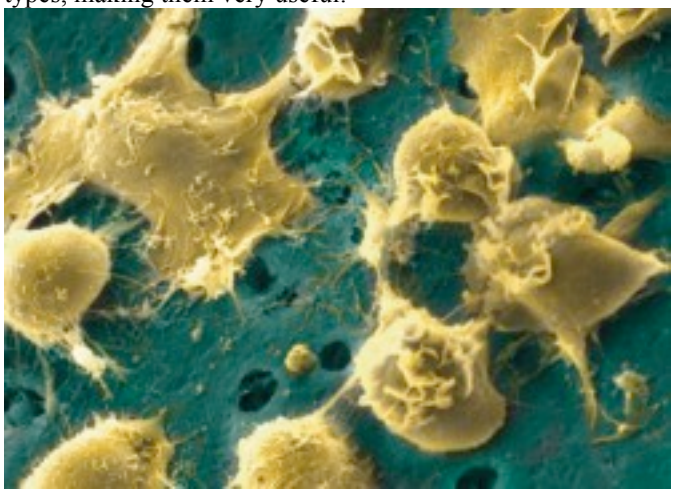
I. Introduction

Stem cells have always been a large source of possible medical advancements due to their nature of being able to develop into any type of cell in the human body. However, the common sources to find stem cells have been found controversial by some (for example, a human fetus and umbilical cord are large sources of stem cells).

However, researches at the University of Miami and other places have started attempting to harvest stem cells from human cadavers. MSCs, or mesenchymal stem cells can be harvested from the bone marrow of human cadavers, while fibroblasts could be harvested from the skin and pluripotent stem cells from the brain of cadavers.

II. Methods

Mesenchymal stem cells can be found in human bones, and unlike a lot of other cells, can live in an environment of low oxygen, so when a person dies, these cells should last longer then normal cells. Gianluca D'Ippolito and his colleagues at the University of Miami, Florida, have sent out to investigate just how long and if these cells would be safe to use. The cells can be turned into bone, cartilage, fat and many other cell types, making them very useful.



In the past stem cells have also been harvested from the skin of cadavers and hopefully use the process of turning mature cells into immature cells and then use the fibroblasts to create extracellular matrix, or scaffolding between cells. Now cells could be taken from the brain lining of cadavers and culture living pluripotent stem cells, or induced immature cells.

III. Results

The results for MSCs is very promising, but as a fellow researcher to D'Ippolito, Paolo Macchiarini of Karolinska Institute of Stockholm, Sweden, has said, the cells collected from cadavers may not be as healthy as we think them to be, so further research must be conducted to see if they are indeed safe. However, if an entire spine of a cadaver were used to harvest stem cells, one would end up with billions of cells.

Cells harvested from 146 human brain donors were grown and induced into pluripotent stem cells. The bodies they collected from had been dead nearly two days and were kept cool but not frozen. The cultivation was on a larger scale then ever done before. The cells from the brain lining were 16 times as likely to grow successfully then those cells from the scalp.

IV. Discussion

While stem cells are a controversial matter, no one can deny their importance and their potential of curing a plethora of diseases and disorders of the human body. Therefore, any new sources of stem cells should most definitely be looked in to. With further research as to the safety of MSCs, stem cells can be harvested from the cadavers of donors, in an uncontroversial way.

Until further research can be done, however, it is unsafe to use the MSCs from cadavers. It can also be said that cadavers are not a good source and that a live donor would be preferred, for they can give living, healthy cells and they can regrow them to donate again.

References

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