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Editorial

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Human Stem Cells Created by Cloning: Allergic Implications!

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Editorial

It was hailed as a medical revolution that cloning techniques could be used to create stem cells with a view to curing illnesses from allergies to anaphylaxis.

This caused a great ethical debate and associated competing technology.

This was followed by a production of patient embryonic stem cells from cloning and this raised the question of therapeutic cloning?

Therapeutic cloning or somatic-cell transfer begins with the same process to create Dolly.

A donor cell from a body tissue such as skin is fused with an unfertilized egg from which the nucleus has been removed.

The egg 'reprograms' the DNA in the donor cell to an embryonic state and divides until it reaches the early, blastocyst stage.

The cells are then harvested and cultured to create a stable cell line that is matched to the donor and that can become almost any cell type in the human body.

Some researchers used inactivated Sendai virus (known to induce fusion of cells) to unite the egg by using electric jolt to activate embryo development.

When their first attempt produced 6 blastocysts but no stable cell lines they decided to prevent the egg from premature activation.

The researchers carried a battery of tests to prove that their SCNT cells could form various cell types including heart cells that are able to contract spontaneously.

The cell line were created using foetal skin cells others were derived from donor cells from an 8-month-old patient with a rare metabolic disorder, to prove that ESCs (Embryonic Stem Cells) could be made from more mature donor cells.

The technique does not require prohibitive numbers of eggs to produce one cell line and 5 from a different donor to make another.

Improvements may be necessary to convince people that SCNT research is still worthwhile.

Egg donation is expensive and according to some bioethicists, risks creating an organ trade that preys on the poor.

Because the procedure requires the destruction of embryos funds cannot be used to make or study SCNT-derived cell lines until further research is done.

The fact that the technique may be used to create human clones is another sticking point.

The research may create "cloning hysteria " that stem cell researchers could capitalize on.

There are researchers who for over a decade have been unable to clone a monkey.

There are those who say that cloning a human being using SCNT technique is not possible.

Other researchers are shifting their research to programming adult cells to an embryonic state to produce induced pluripotent stem (PM) cells.

This technique does not involve the destruction of embryos.

What is awaited is a head to head comparison between Induced Pluripotent Stem (iPS) cells and SCNT cells.

Some research shows that stem cells derived from SCNT are more likely to result in vitro fertilization.

A study is now being conducted to compare iPS cells and SCNT cells derived from the same donor.

These results could be of major significance in allergies and allergic reactions!

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