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International convention against the reproductive cloning of human beings

Note verbale dated 17 October 2003 from the Permanent Mission of Cuba to the United Nations addressed to the Office of Legal Affairs of the United Nations Secretariat

The Permanent Mission of Cuba to the United Nations presents its compliments to the Office of Legal Affairs of the United Nations and has the honour to request that the annexed document should be circulated as a document of the fifty-eighth session of the General Assembly, under agenda item 158 (see annex).

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Scientific basis of cloning for therapeutic and research purposes

The birth in 1997 of Dolly the sheep, the world's first cloned mammal, was a milestone in the history of science.

The following year, *Science* magazine published an article on possible therapeutic applications of cloning, referring to the work of the laboratories of Dr. Thomson of the University of Wisconsin (United States of America) and of Dr. Itzkovitz of the National Medical Centre, Haifa (Israel).

For the first time in history human embryo parent cells were converted into blood cells. This discovery was the first genuine sign that such cells could be made into different types of human tissue.

That success brought closer the dream of developing treatments for leukaemia and other blood disorders.

"Cloning" means creating genetically identical structures.

- Therapeutic cloning uses a range of techniques, with the objective of producing parent cells.
- Parent cells — totipotent or stem cells — are immature, undifferentiated cells which have the ability to develop into differentiated, specialized cells of any one of the 200 or more varieties which make up the body.
- The technique of cloning involves making a cell composed of an egg (female reproductive cell) with its original nucleus replaced by a somatic cell. The resulting cell, created in vitro, is similar in many ways to a fertilized egg. Under suitable laboratory conditions, it can produce a blastocyst, which could in theory be transplanted into a uterus and grow into a foetus, or can be used as a source of stem cells in order to grow tissue.

The research using the nuclear-transfer techniques described above could be central to improving our basic knowledge on:

- How to influence a cell nucleus to activate the appropriate genes to produce a particular specialized cell;
- The genetic basis of human illnesses;
- Reprogramming defective human genes.

The opportunities presented by cultivating stem or totipotent cells are very promising and will perhaps remain one of the greatest advances in medicine for some time to come. For example, the technique will make it possible to produce genuine human cells for transplanting into a patient to repair damaged tissues or organs.

This makes it possible to obtain cells which are immuno-compatible with all receptors, something which is obviously useful in treating conditions as serious and varied as diabetes, Parkinson's disease and heart attacks, producing hope of positive

influence where once they were considered irreversible. Parent cells produced with the help of the patient would be appropriately altered to become differentiated into various cells, depending on the need: dopamine-producing nerve cells to treat Parkinson's disease, pancreatic beta cells for diabetics, hepatocytes for patients with cirrhosis of the liver, and so on.

Therapeutic cloning depends on being able to produce tissues which will not cause rejection problems. Any person could then have a tissue bank which was fully compatible because it was genetically identical to that person. This would solve the problems which currently affect transplants of tissues and organs.[a]

Therapeutic cloning would not only be useful in solving the problems of transplants. Brain cells which die off slowly as a result of irreversible, degenerative neurological disorders such as Alzheimer's disease could be replaced with fresh cells.

To sum up, cloning for therapeutic and research purposes has considerable scientific potential. As a matter of ethical obligation, that potential should be explored and developed.

Opponents of cloning carried out by the nuclear-transfer technique described above argue that it is possible to obtain stem cells from alternative sources. Recently some have claimed that adult stem cells have been proven to be sufficiently versatile and that therefore there is no need to obtain stem cells from very early human embryos. The consensus reached in the international scientific community is that the scientific findings reported so far do not support this conclusion. Currently, therefore, research on both adult and embryonic stem cells is vital for an appropriate evaluation of the prospects for stem cell therapy for the treatment of serious illnesses and disorders.[b]

A longer-term objective would be to learn to reprogramme somatic cells (for example, adult skin cells) to covert them into stem cells which are compatible with the patient without the need to resort to other techniques.

The use of cloning for reproductive purposes, however, should be totally excluded. Evidence has shown that when this type of reproduction is used in animals, there is a markedly higher incidence of foetal abnormalities and loss during the gestation period of mammals on which experiments have been carried out and of malformation and death among newborns. No one and nothing can guarantee, today, that the same will not apply to humans.

Prohibition of human reproductive cloning is essential, moreover, because such cloning is contrary to the generally accepted concept of human dignity and threatens future generations by endangering their health and their personal and social well-being. Furthermore, human reproductive cloning must be prohibited because it jeopardizes the diversity and uniqueness of the individual, imposing the risk of absurd projects for the mass production of human beings and making the individual vulnerable, inter alia, to new types of labour and social discrimination.

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[a] See enclosure on transplants.

[b] Draft declaration on human cloning, circulated to the academies of science of the world by the executive committee of the inter-academic panel, 27 May 2003.

Enclosure

Possible applications in the area of transplants

In the specific case of transplants, medicine is faced with the following problems which would be resolved by therapeutic cloning:

(a) Shortage of organs

The demand is greater than the supply.

(b) Immunological rejection

In order to alleviate rejection reactions, drugs are used which are not always effective.

With therapeutic cloning, damaged tissues would be replaced and there would be no rejection of transplanted organs since the transplanted tissue would correspond fully to the patient's genetic material and, therefore, there would be no incompatibility of any kind.

(c) Inadequate quality of organs

Transplants are carried out with donated organs, in many cases from older persons and cadavers. Problems of organ quality often arise, so that it is not unlikely that there will be situations such as: infections, viruses, cancerous cells, etc., which could be avoided with therapeutic cloning.