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Therapeutic Cloning Ignites Call for Ban

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SEATTLE (AP) -- In a clash of politics and science, the first successful cloning of a human embryo - and the extraction of stem cells from it - has ignited new calls for a ban on all forms of human cloning in the United States.

The cloning announcement by South Korean scientists on Thursday prompted members of Congress and church leaders to ask for immediate legislation.

"Cloning human beings is wrong. It is unethical to tinker with human life," said Rep. Joe Pitts, R-Pa. A ban must be passed, he said, "before this unethical science comes to our shores."

The Bush administration favors such action and referred reporters to a statement by the president calling for "a comprehensive and effective ban."

"Human life is a creation, not a commodity, and should not be used as research material for reckless experiments," Bush said last month.

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Sen. Edward Kennedy, D-Mass., who voted against a bill passed last year by the House that called for a ban on human cloning, said there needs to be legislation that would prevent cloning of babies, but permit "lifesaving stem cell research to proceed under strict ethical guidelines."

Two South Korean scientist who announced the landmark achievement here Thursday said they have already been the target of street demonstrations and egg-throwing incidents in Seoul even though their work is directed at treating diseases and not at making cloned babies.

Woo Suk Hwang, lead author of the study, admitted at a news conference that the technique developed in his lab "cannot be separated from reproductive cloning" and called on every country to prevent the use of the technology in that way.

He said the work was controlled and regulated by the Korea Stem Cell Research Center "to prevent the remote possibility of any uncontrolled accidents such as human reproductive cloning."

Shin Yong Moon, a co-author of the study, said the work must continue because of its great promise for treating of diseases such as Parkinson's, Alzheimer's, spinal cord injury and diabetes. But he said a new law passed in Korea will now require his group to get a government license before proceeding with their research.

The medical use of stem cells derived from cloning will require at least another decade of research, he said.

Both Hwang and Moon are researchers at the Seoul National University.

Donald Kennedy, editor of the journal Science, which published the study, said the work is not a recipe for cloning babies.

"It is a recipe (for human cloning) in the sense that 'catch a turtle' is the recipe for turtle soup," said Kennedy at a news conference. "There is much difficulty that would remain for anybody who tried to use this technology as a first step toward reproductive cloning."

Hwang, Moon and their team created the human embryo after collecting 242 eggs from 16 unpaid, anonymous volunteers. They also took from each woman cells from the ovaries. To attempt male embryo cloning, they used cells taken from the ear lobes of adult men.

The researchers extracted the nucleus from each of the eggs and then inserted the nucleus from the other cells.

The eggs were then nurtured into blastocysts, an early stage of embryo development, and the stem cells were extracted.

Hwang said the group had a 43 percent success rate in making cloned embryos, but was successful only in making one colony of stem cells. Only the embryos made using both the nucleus and the egg from the same woman successfully matured enough to make stem cells, he said; eggs that received nuclei from adult male cells or from adult cells of women other than the egg donor failed to produce stem cells.

Hwang, a veterinarian, developed the cloning technique on animals and then teamed with Moon for the human embryo experiment.

Embryonic stem cells are the source of all tissue. Researchers believe they can be coaxed to grow into heart, brain or nerve cells that could be used to renew ailing organs.

In the experiment, Hwang and his team said, the embryonic stem cells in tests that followed the cells for 70 divisions formed muscle, bone and other tissue.

Using cloned embryonic stem cells for therapy would avoid the problem of tissue rejection. Cloned stem cells, in theory, would be an exact genetic match to the cell donor and would not be attacked by the immune system.

Regulations approved by President Bush permit federal funding of stem cell research, but only on cell lines created from embryos destroyed before Aug. 9, 2001. The approved cell lines were not created by cloning, however.

Kennedy, the Science editor, said the U.S. restrictions are handicapping American researchers.

"There is no question that the degree of restriction has given other nations some significant advantage," he said.