



## Will the UN Beat the Ban?

### Leading researchers make a global case for embryonic stem cells

CAMBRIDGE, Mass. (July 7, 2004) — For stem cell research, this was a “Who’s Who?” gathering. Those taking the stage at United Nations headquarters in New York included Whitehead Founding Member [Rudolf Jaenisch](#); Douglas Melton of Harvard University; Roslin Institute’s Ian Wilmut, the Scottish embryologist who cloned Dolly; and Seoul National University’s Shin Yong Moon, who culled embryonic stem cells from the cloned human blastocyst earlier this year.

But last month’s assemblage had more than research results in mind. Sponsored by the Genetics Policy Institute, a therapeutic cloning advocacy group, the event gave United Nations delegates a chance to hear from leading scientists the differences between therapeutic cloning and reproductive cloning. In doing so, the researchers hoped to educate UN delegates for deliberations in October, when they will vote on a global ban on all forms of human cloning — including therapeutic cloning.

On the previous day, Columbia University’s Gerald Fischbach had set the tone. “Therapeutic cloning and reproductive cloning share a word,” he said. “Otherwise, they’re completely different.”

But that word is certainly a loaded one and has caused no shortage of confusion and controversy. To understand, then, exactly how different they are, one needs to understand both the science and the goals of the science.

Jaenisch took on the job, explaining to the delegates how both forms of cloning begin with a process called nuclear transfer. A nucleus is removed from a cell (almost any type of cell will do) and transferred into an egg cell.

For therapeutic cloning, the egg cell is placed into a Petri dish where it turns into a blastocyst — that is, a cluster of about 100 cells. From this small group, researchers can then extract embryonic stem cells. For reproductive cloning, the egg cell is placed into a uterus where it can then develop into an embryo. And for many people, the distance between a uterus and a Petri dish is uncomfortably close.

But Jaenisch was clear in distinguishing between the two processes. “Cloned cells are perfectly normal,” he told the audience. “But cloned animals are not.”



Rudolf Jaenisch  
credit: Sam Ogden

Jaenisch explained how the actual process of reproductive cloning is highly inefficient. Most embryos die in utero, most fetuses die at birth, and the few that survive suffer any number of abnormalities. As a result, Jaenisch doesn't buy the argument that therapeutic cloning is nothing more than creating life for the purpose of destroying it. "With therapeutic cloning, you are not destroying a potentially normal life." (Echoing this sentiment, Harvard's Melton later remarked that "saying that a cell is a person is like saying an acorn is a tree.")

Other panel members explained their attempts to use stem cells to overcome disease. Lawrence Goldstein of the University of California, San Diego, described how he has used embryonic stem cells to make Alzheimer's neurons in order to study the disease's molecular mechanisms. Woo Suk Hwang, from Seoul National University, described how he applied therapeutic cloning to treat a dog with spinal cord injury. And Harvard's Melton explained his views on why embryonic stem cells are the best bet for creating insulin-producing pancreatic beta cells — promising to help treat Type 1 diabetes.

And Gerald Schatten, of the University of Pittsburg School of Medicine, left the audience with this question: "Do you want to have to tell your children that you were part of a group that snuffed out one of the most exciting areas of research in its infancy?" The question hung in the air.

Written by David Cameron.