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NEWS

SCIENCE

Researcher discovers new stem cells

Adult cells may be used for research

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Stem cells have long intrigued scientists and the public with their potential to treat incurable diseases. Stem cells' pluripotency means they have the ability to become almost any cell in the body.

With the release of studies in the past three years by Japanese researcher Shinya Yamanaka and other scientists, the public has increased interest in what are called induced pluripotent stem cells.

According to Dr. Carol Brenner, associate professor for the departments of physiology and obstetrics and gynecology at Wayne State's School of Medicine, these cells are adult cells reprogrammed to become like embryonic stem cells.

"In other words," Brenner said, "They have the same factors that cause embryos to develop into different cell types."

Yamanaka, in his research, tried several transcription factors until he found only four that made adult stem cells pluripotent like embryonic stem cells. According to Brenner, these are called pluripotent stem cell factors. This research broke from the more familiar work in embryonic stem cells and adult stem cells.

"Nobody believed the guy when he started," Brenner said. "I don't think this really caught on until last year."

But according to Loeb, scientists haven't yet learned how to use these stem cells therapeutically. The public may be jumping the gun when it comes to the finality of this research.

"One of the things that everyone keeps forgetting is that we don't really know the potential of induced pluripotent stem cells," Brenner said. "It's an experiment, so we don't know how far we can go with these cells, yet."

Brenner's work includes studies in primate embryology and in making monkey embryonic stem cell lines.

Brenner said she is interested in the new and tricky work of comparing iPS cells and embryonic stem cells. But according to Brenner, any discussion concerning funding would be premature at this point.

Securing funding is often the most frustrating step in developing research. Also, as director of research for the Hiller ALS Center, Loeb's major job is bringing in funding for the center's research programs.

"The important thing is to speak to people. There are a lot of scientists out there saying things, but not in words that the general public can understand," he said.

Dr. Jean Peduzzi-Nelson, associate professor of the department of anatomy, also understands the link between awareness and funding. She worked on a clinical study in

embryonic stem cells and adult stem cells.

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Once research like this gets published, it makes its way around the world to research centers and universities, like Wayne State.

"I think there's a lot of enthusiasm at Wayne State in stem cell research based on many new discoveries, not just that one," said Dr. Jeffrey Loeb, associate director for the Center for Molecular Medicine and Genetics and associate professor for the department of neurology at Wayne State.

Dr. Jean Peduzzi-Nelson, associate professor of the department of anatomy, also understands the link between awareness and funding. She worked on a clinical study in Portugal, with many patients from the Detroit area, on transferring olfactory tissue containing adult stem cells to the areas of spinal cord injury for paralyzed patients who later showed improved mobility.

"A lot of people don't even know that there is such a thing as adult stem cells," she said. "Unfortunately, when there are problems using stem cells, people may think that all stem cells are bad."