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No dead babies required

California university announces breakthrough treatment for deadly malady using umbilical cord stem cells

Stem-cell research in California has led to the development of a new drug to treat a blood disorder that can lead to leukemia, the University of California, San Diego, announced yesterday.

[[StemCellDoc.jpg]]The study, headed by UC-San Diego assistant professor of medicine Dr. Catriona H.M. Jamieson, "found an inhibitor that can stop the over-proliferation of blood cells that results in problems with blood clotting, heart attacks and, in some cases, leukemia," said the announcement. Jamieson also directs stem-cell research at Moores UCSD Cancer Center. Her study, funded in part by the California Institute for Regenerative Medicine, will be published in *Cancer Cell* on April 8.

In a statement released the same day, Gov. Arnold Schwarzenegger praised UCSD's "innovative research," which has made California the leader "in the development of a life-saving therapy to help more than 100,000 Americans."

"I am proud of our state's commitment to stem cell research, which delivers the best promise in finding treatments for deadly and debilitating diseases," said Schwarzenegger. "With continued investments in stem cell research, California scientists are adding new rays of hope for millions of people around the globe."

It appears that "innovative research" was conducted without the use of stem cells derived from embryos. The rare blood disease is actually a class of blood diseases, called myeloproliferative disorders (MPD), which cause an overproduction of blood cells through a mutation in the stem cell which later differentiates into red and white blood cells. In the current study, researchers transferred human cord blood stem cells, which were engineered to produce the mutated gene, into the livers of mice. The mice subsequently developed a disease that looked like a particular MPD disorder. The results were corroborated when researchers inserted stem cells from patients with the disorder into mice and achieved the same results.

Cord blood stem cells are derived from a newborn baby's umbilical cord blood and have the advantage over bone marrow and peripheral blood stem cells since "they are immunologically 'younger' and appear to be more versatile," said a Feb. 20, 2008 *Medical News Today* article. Cord blood stem cells, the article continued, "are able to differentiate into nearly all cell types in the body" and "offer important advantages, including the fact that "there is no controversy involved in their collection."

Based on UCSD's research, the San Diego-based pharmaceutical company TargeGen developed an inhibitor to block the "over-expression of the gene" that causes MPD "and reverse excessive production of red blood cells." Since the inhibitor selectively targets the mutation that causes the disease, "side effects have been minimized," said the UCSD announcement.

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