

CONTAMINATED? USELESS? THE TRUTH ABOUT EMBRYONIC STEM CELLS

“Most of those stem cells were contaminated and therefore useless.”

~Mary Tyler Moore, Int’l Chairman, Juvenile Diabetes Research Foundation

Mary Tyler Moore will be glad to learn that her concerns are misplaced. Dispelling earlier reports of dangers, scientists have now found that embryonic stem cells currently eligible for federal funds are indeed safe for human trials and use.

SCIENTISTS HAVE FOUND THAT EMBRYONIC STEM CELL LINES GROWN USING FEEDER CELLS DO NOT POSE A RISK TO HUMANS

In 2005, researchers at the Technion-Israel Institute of Technology in Haifa studied possible risks of human infection from embryonic stem cell lines that had been grown on mouse feeder cells. They found no evidence of human infection, even on stem cells which had been growing on feeder cells for extended periods of time. Referring to stem cells grown on such feeders, Dr. Joseph Itskovitz-Eldor concluded, “the cells can be tested, and we believe it will be possible to use them clinically.”¹

CONTAMINANT ON EMBRYONIC STEM CELLS FROM MOUSE FEEDER CELLS CAN BE WASHED OFF, MAKING THEM USABLE IN HUMANS

Researchers have found that the foreign sugar molecule which appears on the surface of embryonic stem cells grown on mouse feeders can be removed. Dr. Fred Gage has found that “the sugar gradually disappears once cells are removed from the feeder layers.” This discovery alleviates previous concerns that these embryonic stem cells would be rejected by the human immune system. After being cleaned, they are able to be used in humans. In light of these findings, Dr. Hans Kierstead and others conclude that “those concerns, widely reported, may have been overstated.”²

THE BOTTOM LINE:

**THE EMBRYONIC STEM CELLS CURRENTLY
ELIGIBLE FOR FEDERAL FUNDING ARE SAFE
FOR HUMAN TREATMENTS**

¹ Science Magazine, June 10, 2005; also *No Evidence for Infection of Human Embryonic Stem Cells by Feeder Cell-Derived Murine Leukemia Viruses* Amit M, Winkler M, Menke S, Bruning E, Buscher K, Denner J, Haverich A, Itskovitz-Eldor J, Martin U. *Stem Cells*. 2005; 23:761-771.

² Science Magazine, June 10, 2005; also *Human embryonic stem cells express an immunogenic nonhuman sialic acid* Martin M, Muortri A, Gage F, Varki A. *Nature Medicine*. 2005 February; 11(2): 228-232.

