

NEW YORK STEM CELL FOUNDATION APPLAUDS CELL BREAKTHROUGH BY DR. DOUGLAS A. MELTON

NEW YORK, NY (August 27, 2008) – The New York Stem Cell Foundation (NYSCF) – a privately-funded non-profit organization dedicated to advancing cures for major diseases through stem cell research – today hailed the announcement by Harvard Stem Cell Institute (HSCI) Co-Director Douglas Melton, PhD, and his colleagues that they have succeeded in reprogramming adult pancreatic cells into insulin-producing beta cells in mice. The new research is a major step forward in understanding the process of reprogramming one cell type into another and could have implications for the treatment of multiple degenerative diseases. Dr. Melton is a founding member of NYSCF’s Medical Advisory Board.

In a paper published in the online edition of the journal *Nature*, Melton and colleagues at the Harvard Stem Cell Institute reported that they were able to convert one type of mature, differentiated somatic cell into another without first reverting the cell to an undifferentiated pluripotent state. Using a strategy similar to that employed to reprogram adult cells to pluripotent iPS cells, the researchers introduced viruses carrying three genes involved in pancreas development into adult diabetic mice. While the new cells were not able to fully correct the diabetic state, these genes were able to convert some of the remaining mature pancreatic cells into the insulin producing beta cells that are normally destroyed in diabetes. As the technique requires viruses to introduce the genes, much work remains to make the strategy ready for the clinic. However, future improvements could make similar approaches generally useful for converting abundant adult cell types into other cell types needed for repair of damaged tissues.

The work adds to a growing array of tools available to researchers studying regenerative medicine. “The pace of regenerative medicine research is breathtaking – we are reading about major, new discoveries literally every week,” said Susan L. Solomon, CEO of the New York Stem Cell Foundation. “Dr. Melton and his colleagues have achieved a remarkable result that brings us that much closer to understanding how we might better combat or even prevent diabetes.”

Dr. Kevin Eggen, Associate Professor, Department of Stem Cell and Regenerative Biology, Harvard University, and Assistant Investigator, Stowers Medical Institute, noted: “This is a major advance that once again demonstrates that a sophisticated understanding of how humans develop can be leveraged for the discovery of new approaches to replace cells that are destroyed through aging and disease. In this case, the discovery of methods for directly turning other cells in the pancreas into the insulin-producing cells that are destroyed by diabetes suggests a brand new, never imagined means for treating diabetes, which affects millions of people. However, results like this would never have been possible without basic investigations into embryonic cell development and underscores the importance of pushing forward on all fronts – through direct reprogramming and other methods for trying to replace diseased cells, for instance with embryonic stem cells. I think it’s important to point out that this development in no way supplants the need for research on human embryonic stem cells, which are still one of our best options for coming to a better understanding of – and treatments for – human disease.”

(more)

“The work reported by Dr. Melton and his colleagues is an important step forward in the long and arduous process of developing cell-based treatments for diabetes,” said Dr. Zach W. Hall, a former Institute Director at the NIH, and former President of the California State Stem Cell Initiative. “Our rapidly growing understanding of how cells differentiate through continued research on embryonic stem cells, iPS cells and the conversion of adult cells will dramatically increase our chances for devising the optimal treatment for each of a wide range of diseases.”

About The New York Stem Cell Foundation

Founded in 2005, The New York Stem Cell Foundation is a privately funded foundation dedicated to furthering stem cell research to advance the search for cures of the major diseases of our time. The foundation opened the first privately funded stem cell laboratory in New York City in March 2006 to serve as a “safe haven” where scientists can conduct advanced stem cell research free of federal restrictions. The organization supports scientists engaged in stem cell research through grants, fellowships and symposia; runs collaborative, state-of-the-art research facilities supported entirely with private funds and directly focused on curing disease; and educates the public about the importance and potential benefits of stem cell research.

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