

Understanding pluripotent stem cells

March 8 2011

Paul Tesar, PhD, of Case Western Reserve University, a member of the inaugural class of The New York Stem Cell Foundation – Robertson Investigators, published his research on the ability to isolate epiblast stem cells from preimplantation mouse embryos. This research enhances our understanding of the many forms of pluripotent stem cells that scientists use for researching so many debilitating diseases.

"I think that this paper will change the way people think about what human ES cells represent from a developmental perspective," said Dr. Kevin Eggan, NYSCF Chief Scientific Officer and Associate Professor of Stem Cell and Regenerative Biology at the Harvard Stem Cell Institute.

The study, "Isolation of Epiblast [Stem Cells](#) from Preimplantation Mouse Embryos", was published in *Cell Stem Cell* on March 4th, 2011. In 2007, Dr. Tesar was the lead author on the study that first isolated mouse epiblast stem cells from post-implantation mouse embryos when he was a graduate student in the NIH-Oxford Biomedical Research Scholars program, splitting his time between the two institutions.

Dr. Tesar's research focuses on understanding how different cell types in the nervous system are initially formed during development and how they are maintained throughout adult life. "My hope is that by understanding these basic questions we will be able to prevent or repair damage caused by disease, aging, and injury," said Dr. Tesar. "Research in my lab has the potential to impact a number of devastating neurodegenerative and mental health conditions such as Parkinson's

disease, ALS, Huntington's disease, autism, and multiple sclerosis."

Research in the Tesar lab aims to develop new strategies to restore function in patients afflicted with myelin-based disorders. Loss of myelin results in an impairment in the body's ability to send signals along the neurons. "Dr. Tesar is a wonderful young scientist and the research he is doing will provide significant advances for patients with myelin-based diseases," said Susan L. Solomon, Chief Executive Officer of The New York Stem Cell Foundation. "We are delighted to support Dr. Tesar's critical research, which has the potential to accelerate the path from bench to bedside. He is well on his way to a successful career."

NYSCF named Dr. Tesar as one of six NYSCF Investigators at its Fifth Annual Translational Stem Cell Research Conference last October as an expansion of its ongoing efforts to promote the next generation of stem cell scientists. Each of the NYSCF – Robertson Investigators receive \$1.5 million over the next five years to expand their own laboratories, train other scientists and foster innovative high-risk/high reward research to explore the therapeutic potential of stem cells derived from humans and model organisms. This funding will support the most promising and creative scientists whose research projects have the potential to accelerate the path from bench to bedside.

Provided by New York Stem Cell Foundation

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