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NYSCF ANNOUNCES ROBUST, HIGH-THROUGHPUT PROTOCOL FOR DERIVING MICROGLIA FROM HUMAN STEM CELLS

New York, NY (May 18, 2017) – Scientists from the New York Stem Cell Foundation (NYSCF) Research Institute have developed a robust, efficient method for deriving microglia, the immune cells of the brain, from human stem cells. Microglia are increasingly implicated in neurological disorders including Alzheimer's disease, Parkinson's disease and multiple sclerosis, among many others. However, research into the role of human microglia in these disorders has long been hampered by the inability to obtain them from the human nervous system. This new protocol now enables scientists around the world to generate this critical cell type from individual patients and improve our understanding of the role of microglia neurological malfunction.

"NYSCF's mission is to bring cures to patients faster," said Susan L. Solomon, CEO and co-founder of NYSCF. "One way we work towards this goal is by developing methods and models that lift the entire field of stem cell research. This new protocol is the perfect example of the type of method that will enable researchers around the world to accelerate their work."

Published in *Stem Cell Reports*, this microglia protocol is optimized for use in high-throughput experiments, such as drug screening and toxicity testing among other large-scale research applications, and has the benefit of allowing such experiments to be carried out on multiple patient samples. The scientists determined that the protocol is robust and reproducible, generating microglia from sixteen induced pluripotent stem (iPS) cell lines, stem cells that are created from individual patients.

Microglia from humans have long been a desired research model, but are difficult to obtain for laboratory experiments. The NYSCF protocol provides a new source of human microglia cells, which can be generated from disease patient samples and will complement studies in mouse models to better understand the role of microglia in health and disease. Microglia generated by the NYSCF protocol will thus provide a critical tool to investigate microglia dysfunction in central nervous system disorders and advance complex disease modeling in a dish.

NYSCF scientist Dr. Panos Douvaras is first author on the paper and NYSCF scientists Dr. Scott Noggle and Dr. Valentina Fossati are co-senior authors. These NYSCF scientists worked in collaboration with colleagues from the NYSCF Research Institute and others at the Icahn School of Medicine at Mount Sinai with support from National Institute on Aging (NIA). The NIA funding was a part of the U01AG046170 consortium grant from the NIH/NIA through the Accelerating Medicines Partnership in Alzheimer's Disease. This work was also supported by the Oak Foundation and the Conrad N. Hilton Foundation.

About The New York Stem Cell Foundation Research Institute

The New York Stem Cell Foundation (NYSCF) Research Institute is an independent organization accelerating cures and better treatments for patients through stem cell research. The NYSCF global community includes over 140 researchers at leading institutions worldwide, including the NYSCF – Druckenmiller Fellows, the NYSCF – Robertson Investigators, the NYSCF – Robertson Stem Cell Prize Recipients, and NYSCF Research Institute scientists and engineers. The NYSCF Research Institute is an acknowledged world leader in stem cell research and in developing pioneering stem cell technologies, including the NYSCF Global Stem Cell ArrayTM and in manufacturing stem cells for scientists around the globe. NYSCF focuses on translational research in a model designed to overcome the barriers that slow discovery and replace silos with collaboration. For more information, visit www.nyscf.org.