



SQZ Biotechnologies Presents Regenerative Medicine Data Demonstrating Neuron Generation from Human Pluripotent Stem Cells with Single Delivery of mRNA Transcription Factor

6/23/2021

Results Further Establish Company's Broad Cell Engineering Capabilities and Potential to Direct Cell Fate for Multiple Therapeutic Applications

Findings Presented at 2021 International Society for Stem Cell Research Annual Meeting

WATERTOWN, Mass.--(BUSINESS WIRE)-- SQZ Biotechnologies Company (NYSE: SQZ), focused on unlocking the full potential of cell therapies for multiple therapeutic areas, today presented preclinical regenerative medicine data showing that the company's Cell Squeeze® technology can be used to generate neurons from induced human pluripotent stem cells (iPSCs) through the single delivery of an mRNA encoding fate-specifying transcription factor. The new findings build upon recent clinical and pre-clinical research presentations from the company's Oncology and Autoimmune Disease programs and further demonstrates SQZ's broad cell engineering capabilities. The regenerative medicine research was presented at the 2021 International Society for Stem Cell Research virtual annual meeting.

"The ability to precisely stimulate key natural signaling pathways through the delivery of one or multiple transcription factors provides broad cell reprogramming potential that could lead to many new cell therapies and offers a foundation for future regenerative medicines," said Jonathan Gilbert, Ph.D., Vice President and Head of Exploratory Research, SQZ Biotechnologies. "We are excited by these preclinical proof-of-concept data demonstrating that we can rapidly generate neurons with mature markers using optimized, transient mRNA transcription factor expression. This work complements and expands on our earlier published research using SQZ technology to reprogram fibroblasts into iPSCs."

Common methods to generate specific cell types from iPSCs include sequential treatment of cells using multiple extracellular signaling molecules, a process that can be lengthy, inefficient, and result in variable purity, or using viral vectors, which have the risk of undesirable genomic integration.

Cell Squeeze® technology can generate reprogrammed cells by controlling the magnitude and timing of single or multiple cell programming factors. Specific cells generated with this process have the potential to translate therapeutically due to the rapid process, lack of viral or genetic manipulations, and use of our clinically validated manufacturing.

Major Findings from Cell Reprogramming Research:

- **Rapid Induction of Neuronal Differentiation:** Within 24 hours after the single squeeze delivery of Neurog2 mRNA, a key neuronal transcription factor, expression of the early neuronal marker TUJ1 was observed. Additionally, two key mature neuronal makers, MAP2 and NeuN, were identified through continued longitudinal observation.
- **Potent Target Gene Expression:** SQZ scientists developed an optimized mRNA sequence for Neurog2 that showed a 10,000-fold increase in expression of downstream target genes from a single squeeze delivery.
- **Multiplexed mRNA Capability:** The Cell Squeeze® process also co-delivered two mRNA cargos simultaneously, specifically Neurog2 and puromycin N-acetyltransferase, a commonly used enzyme for cell purification. Mature neuronal marker expression and contrast images showed the selective survival of the induced cells, demonstrating that multiple functional mRNAs can be delivered into iPSCs.
- **Maintaining Cell Health:** SQZ investigators demonstrated that the Cell Squeeze process alone does not disrupt normal iPSC gene and protein expression. Findings verified that 24 hours after processing the iPSCs through a SQZ™ chip, there was no significant difference in the expression of 32 common housekeeping genes as well as no disruption in pluripotent marker gene and protein expression.

Together these data show the potential of the Cell Squeeze® technology to rapidly reprogram cells for regenerative medicine applications.

Poster Presentation Details

Title: Microfluidic cell squeezing enables the in vitro generation of induced neurons from human pluripotent stem cells through non-viral transcription factor delivery

Abstract Number: 318

Poster Session: Poster Session 3, New Technologies; Wednesday, June 23, 2021, 12:00 PM - 1:00 PM EDT

About SQZ Biotechnologies

SQZ Biotechnologies is a clinical-stage biotechnology company focused on unlocking the full potential of cell therapies for patients around the world and has active programs in Oncology, Autoimmune and Infectious Diseases, and additional exploratory initiatives to support future pipeline growth. The company's proprietary Cell Squeeze® technology offers the unique ability to deliver multiple biological materials into many patient cell types to

engineer what we believe can be a broad range of potential therapeutics. With demonstrated production timelines under 24 hours and the opportunity to eliminate preconditioning and lengthy hospital stays, our approach could significantly broaden the therapeutic range and accessibility of cell therapies. The company's first therapeutic applications seek to generate target-specific immune responses, both in activation for the treatment of solid tumors and infectious diseases, and in immune tolerance for the treatment of unwanted immune reactions and autoimmune diseases. For more information, please visit www.sqzbiotech.com.

Forward Looking Statement

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements contained that do not relate to matters of historical fact should be considered forward-looking statements, including without limitation statements relating to events and presentations, our product candidates, preclinical and clinical activities, development plans, clinical safety and efficacy, applicability across disease states, regulatory compliance, and therapeutic impact. These forward-looking statements are based on management's current expectations. Actual results could differ from those projected in any forward-looking statements due to several risk factors. Such factors include, among others, risks and uncertainties related to our limited operating history; our significant losses incurred since inception and expectation to incur significant additional losses for the foreseeable future; the development of our initial product candidates, upon which our business is highly dependent; the impact of the COVID-19 pandemic on our operations and clinical activities; our need for additional funding and our cash runway; the lengthy, expensive, and uncertain process of clinical drug development, including uncertain outcomes of clinical trials and potential delays in regulatory approval; our ability to maintain our relationships with our third party vendors; and protection of our proprietary technology, intellectual property portfolio and the confidentiality of our trade secrets. These and other important factors discussed under the caption "Risk Factors" in our Annual Report on Form 10-K and other filings with the U.S. Securities and Exchange Commission could cause actual results to differ materially from those indicated by the forward-looking statements. Any forward-looking statements represent management's estimates as of this date and SQZ undertakes no duty to update these forward-looking statements, whether as a result of new information, the occurrence of current events, or otherwise, unless required by law.

Certain information contained in this press release relates to or is based on studies, publications, surveys and other data obtained from third-party sources and our own internal estimates and research. While we believe these third-party sources to be reliable as of the date of this press release, we have not independently verified, and we make no representation as to the adequacy, fairness, accuracy, or completeness of any information obtained from third-party sources.

i Sharei A, et al. A vector-free microfluidic platform for intracellular delivery. PNAS February 5, 2013 110 (6) 2082-2087; <https://doi.org/10.1073/pnas.1218705110>

View source version on **businesswire.com**: <https://www.businesswire.com/news/home/20210623005188/en/>

SQZ Biotechnologies IR Contact:

investors@sqzbiotech.com

SQZ Biotechnologies Media Contact:

John Lacey

Corporate Communications

john.lacey@sqzbiotech.com

781-392-5514

Source: SQZ Biotechnologies Company