

**Research collaboration with Q
Therapeutics and its founder
Dr. Mahendra Rao**



29th November, 2017

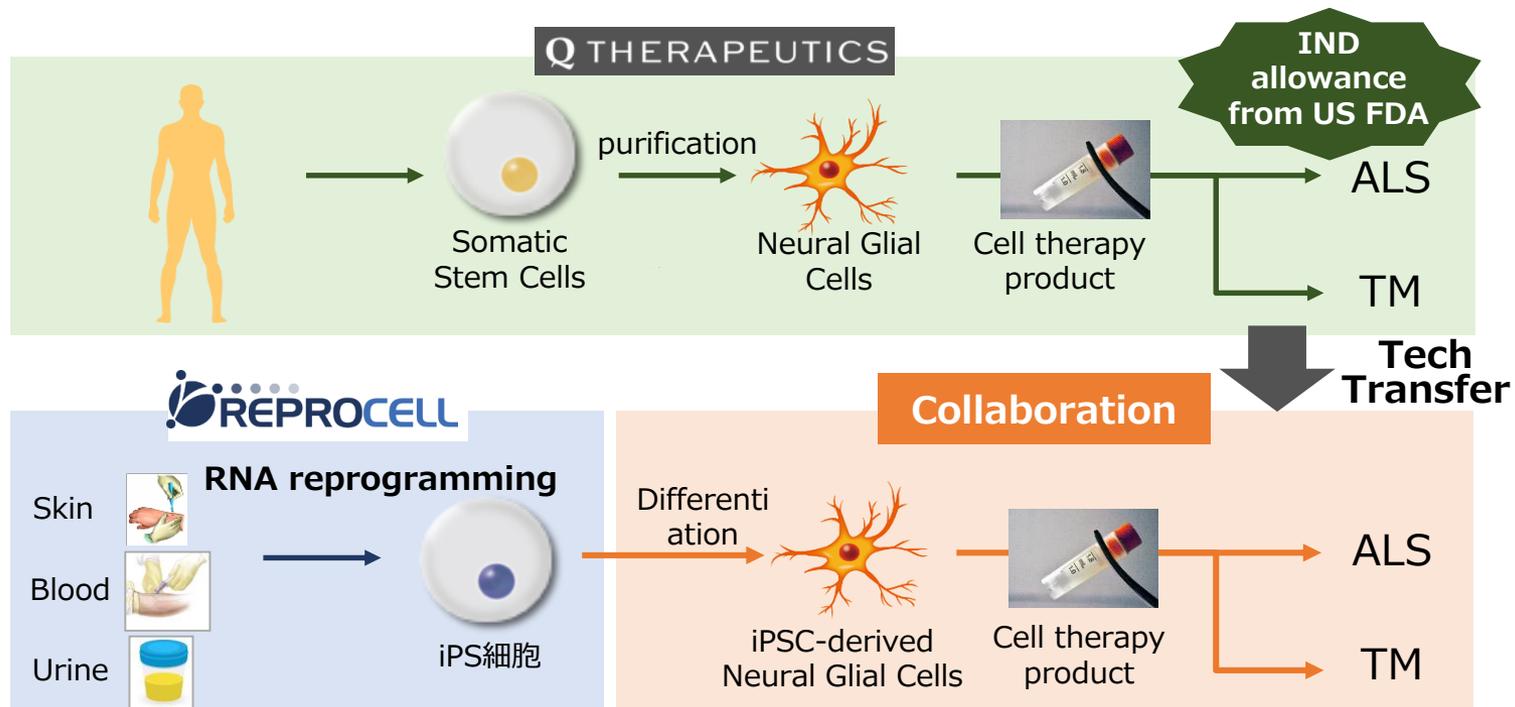
Collaboration with Q therapeutics to develop new iPSC therapies for CNS diseases



REPROCELL announced a collaborative research agreement with Q Therapeutics, Inc. that combines each company's proprietary technologies to develop new iPS cell (iPSC) therapies for central nervous system (CNS) diseases.

Q Therapeutics has patented a process to manufacture glial-restricted progenitor (GRP) cells from any tissue source. GRPs have been proven safe and effective in several pre-clinical CNS disease models. Q Therapeutics has obtained Investigational New Drug (IND) clearance from the FDA in Amyotrophic Lateral Sclerosis and Transverse Myelitis (both orphan indications) for its adult cell product, Q-CELLS™.

This collaboration will enable rapid development of therapeutic-grade, iPSC-derived GRPs on a global scale.



Advantage of RNA reprogramming

RNA reprogramming is more suitable for manufacturing clinical grade iPSCs

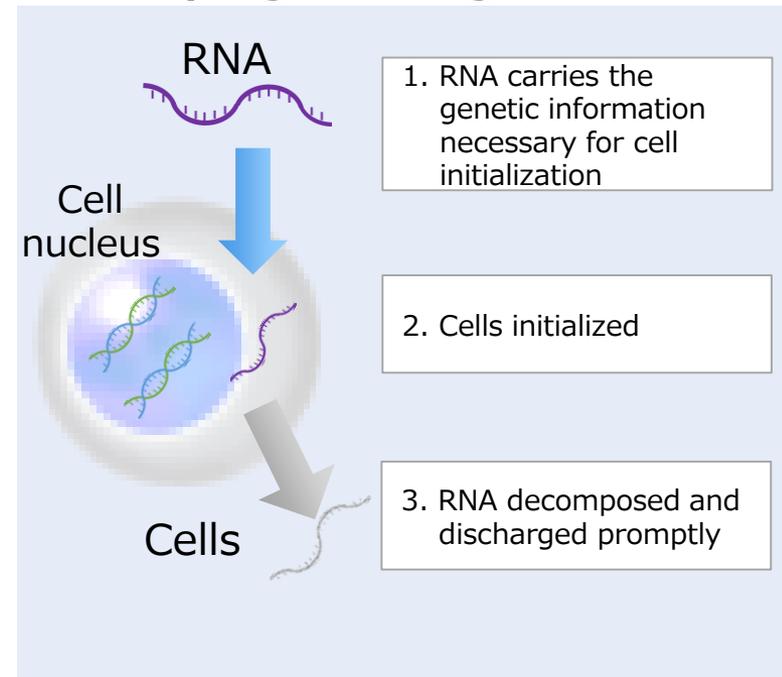
1. Points of review on safety (tumorigenicity) required for pluripotent stem cells

Points of Review	RNA-iPS Cells
1. No chromosomal abnormality	✔ Less chromosomal aberrations than conventional methods
2. No abnormal structure of tumor-associated gene	✔ Less influence on genes than conventional methods
3. No significant survival of foreign genes	✔ Since RNA is decomposed and discharged promptly, it does not remain

2. Quality required for industrialization

Standard	RNA-iPS Cells
1. Quality stability of iPS cells	✔ High quality iPS cells with less variation can be created efficiently
2. Differentiation efficiency to target cells	✔ Efficient differentiation into various kinds of cells

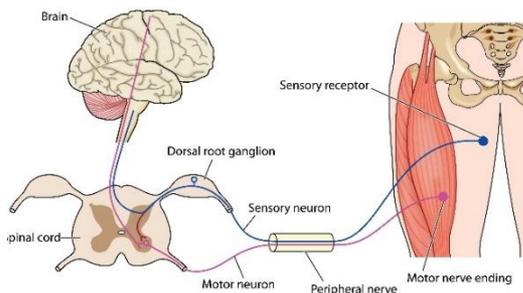
RNA reprogramming overview



About initial target indications

Amyotrophic Lateral Sclerosis (ALS)

Amyotrophic lateral sclerosis (ALS) is a rare group of neurological diseases that mainly involve the nerve cells (neurons) responsible for controlling voluntary muscle movement. Voluntary muscles produce movements like chewing, walking, breathing and talking. The disease is progressive, meaning the symptoms get worse over time. Currently, there is no cure for ALS and no effective treatment to halt, or reverse, the progression of the disease.



Number of Patients

USA
30,000

Japan
10,000

Transverse Myelitis (TM)

TM is an inflammation of the spinal cord. Symptoms include pain, sensory problems, weakness in the legs and possibly the arms, and bladder and bowel problems. The symptoms may develop suddenly (over a period of hours) or over days or weeks. TM can affect people of any age, gender, or race. It does not appear to be genetic or run in families. There is no cure for TM.

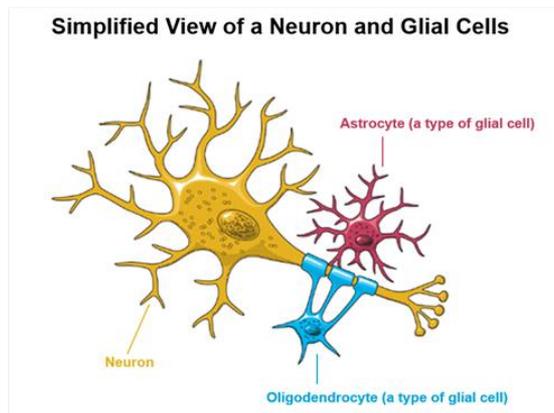


Number of patients

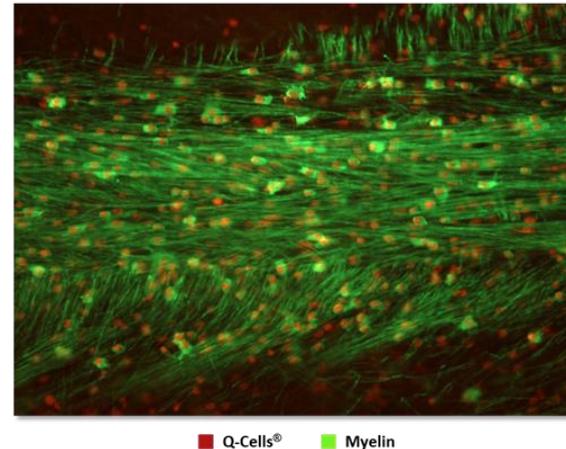
USA
44,000

About Q Therapeutics Inc.

Q Therapeutics is a clinical-stage company developing adult stem cell therapies to treat debilitating central nervous system (CNS) disease and injury. The Company's first therapeutic product candidate, Q-Cells®, is intended to restore or preserve normal CNS activity by supplying essential nerve cell functions. Q-Cells may be suitable to treat a range of CNS disorders, including demyelinating conditions such as multiple sclerosis (MS), transverse myelitis (TM), cerebral palsy and stroke, as well as other neurodegenerative diseases and injuries such as Amyotrophic Lateral Sclerosis (ALS, or Lou Gehrig's disease), Huntington's disease, spinal cord injury, traumatic brain injury, and Alzheimer's disease. Q Therapeutics' initial clinical targets are TM and ALS, with INDs in both indications now cleared to proceed by the FDA.

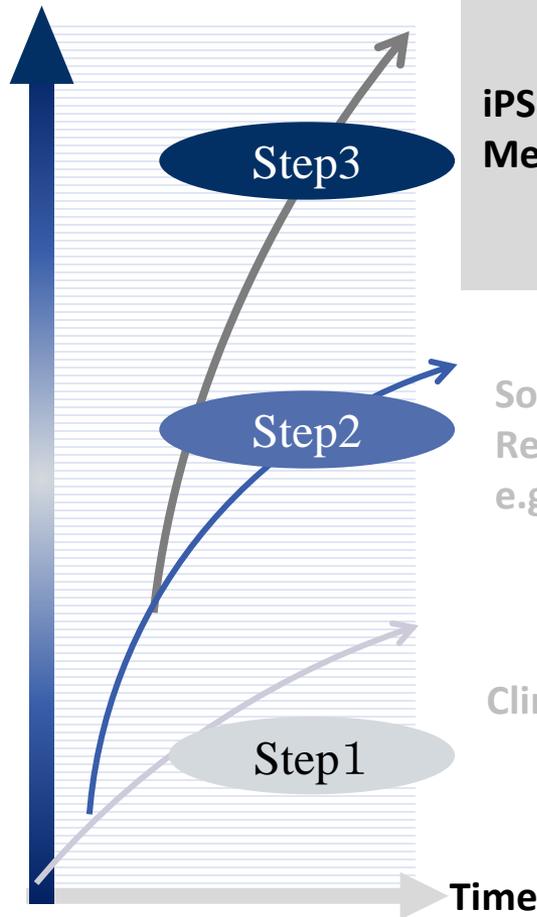


Widespread Production of Myelin in Mouse Brain After Transplant of Q-Cells®



Roadmap for Regenerative Medicine

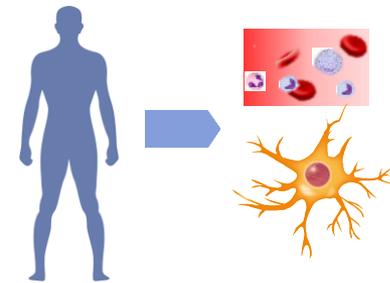
Business Scale



iPSC-based Regenerative Medicines



Somatic Stem Cell-based Regenerative medicines
e.g., MSC, HSC, NSC



Clinical-grade reagents



Positioning of this collaborative research in our business strategy



With the collaborative research with Q Therapeutics Inc., we will accelerate the development of iPSC cell-derived cell therapy products and iPSC cell bank.

Stepwise approach to regenerative medicine

Strategic implications

Estimated market size

