Stem Cell Agency Funds Research to Repair Damaged Knee Cartilage

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Oakland, CA – About 10% of the U.S. population suffers from knee osteoarthritis, a condition in which a prior cartilage injury progresses to the loss of both cartilage and bone in the joint, causing pain and disability. Current treatments are either palliative or involve surgical approaches that have drawbacks in terms of technical feasibility, cost and overall effectiveness. Knee replacement surgery can be effective, but is a serious, complicated procedure with a long recovery time. That's why the governing Board of the California Institute for Regenerative Medicine (CIRM) today voted to invest almost $6 million in an innovative stem cell therapy approach to helping restore articular cartilage in the knee.

Dr. Frank Petrigliano , Chief of the Epstein Family Center for Sports Medicine at Keck Medicine of the University of Southern California (USC), is using pluripotent stem cells to create chondrocytes (the cells responsible for cartilage formation) and then seeding those onto a scaffold. The scaffold is then surgically implanted at the site of damage in the knee. Based on scientific data, the seeded scaffold has the potential to regenerate the damaged cartilage, thus decreasing the likelihood of progression to knee osteoarthritis. In contrast to current methods, this new treatment could be an off-the-shelf approach that would be less costly, easier to administer, and might also reduce the likelihood of progression to osteoarthritis.

This is a late-stage pre-clinical program. The goals are to manufacture clinical grade product, carry out extensive studies to demonstrate safety of the approach, and then file an IND application with the FDA, requesting permission to test the product in a clinical trial in people.

"Damage to the cartilage in our knees can have a big impact on quality of life," says Dr. Maria T. Millan, MD, President and CEO of CIRM. "It doesn't just cause pain, it also creates problems carrying out simple, everyday activities such as walking, climbing stairs, bending, squatting and kneeling. Developing a way to repair or replace the damaged cartilage to prevent progression to knee osteoarthritis could make a major difference in the lives of millions of Americans. This program is a continuation of earlier stage work funded by CIRM at the Basic Biology and Translational stages, illustrating how CIRM supports scientific programs from early stages toward the clinic."

About CIRM

At CIRM, we never forget that we were created by the people of California to accelerate stem cell treatments to patients with unmet medical needs, and act with a sense of urgency to succeed in that mission.

To meet this challenge, our team of highly trained and experienced professionals actively partners with both academia and industry in a hands-on, entrepreneurial environment to fast track the development of today's most promising stem cell technologies.

With $5.5 billion in funding and more than 150 active stem cell programs in our portfolio, CIRM is the world's largest institution dedicated to helping people by bringing the future of cellular medicine closer to reality.

For more information go to www.cirm.ca.gov