UC San Diego
UC San Diego News Center

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Three UC San Diego Researchers Receive New CIRM Grants

Researchers at the University of California, San Diego School of Medicine are principal investigators in three of nine new grants approved today by the governing board of the California Institute for Regenerative Medicine (CIRM).

All of the grants are part of CIRM's Human Induced Pluripotent Stem Cell (hiPSC) Initiative, an effort to develop and advance research into reprogramming cells, such as skin, into pluripotent stem cells that can then be differentiated into other functional cell types, such as neurons. In this case, the grants focus upon creating and operating long-term repositories of high quality stem cell lines representing different diseases that can be used by researchers everywhere.

The CIRM board approved nine grant proposals to create and store 9,000 cell lines from 3,000 individuals representing 11 diseases at a total cost of $32.3 million. Three of the proposals are based at UC San Diego and total more than $2.5 million. They are:

Kang Zhang, MD, PhD
Blinding eye diseases/$1,034,453
Blindness or impaired vision affects 3.3 million Americans over the age of 40, according to the National Institutes of Health. It's a phenomenon that increases with age. The NIH projects 5.5 million blind or vision-impaired Americans by 2020.

Chief among vision afflictions are diseases like age-related macular degeneration (AMD), primary open-angle glaucoma (POAG) and proliferative diabetic retinopathy (PDR). Kang Zhang, MD, PhD, professor of ophthalmology and human genetics at the Shiley Eye Center and director of the Institute for Genomic Medicine, both at UC San Diego, and colleagues propose to obtain skin biopsies from patients with AMD, POAG and PDR and develop retina cell lines derived from differentiated hiPSCs. These lines will help researchers better understand the mechanisms of blinding diseases and aid drug development screening and testing. Ultimately, the hiPSCs might be used to replace degenerated or damaged retinal cells and restore vision.

Joseph Gleeson MD

Childhood neurodevelopmental disorders/$874,135

Many children with brain disorders have symptoms combining autism, cerebral palsy and epilepsy, suggesting underlying and shared mechanisms of dysfunction. In this project, principal investigator Joseph G. Gleeson, MD, professor of neurosciences and pediatrics at UC San Diego School of Medicine, and colleagues aim to identify 500 patients with these disorders, primarily from Rady Children's Hospital-San Diego. The goal is to develop a database of biological, medical, radiographic and genetic information that can be used to study stem cell mechanisms of disease and design therapeutic interventions. Please call 858-822-3538 for information or to participate.

Douglas Galasko, MD

Alzheimer's disease/$643,693

Alzheimer's disease (AD) is the most common form of dementia in the elderly, affecting more than 5 million Americans, among them 600,000 Californians. There are no treatments to slow the progression or prevent the neurological disorder. With colleagues, Douglas Galasko, MD, director of the Shiley-Marcos Alzheimer's Disease Research Center at UC San Diego, will obtain skin cells from 220 persons with AD and 120 controls whose genetic backgrounds have been extensively studied. These cells will be preserved and made available to researchers, in particular hiPSC projects parsing the mechanisms and genetic risk of AD and for screening and testing new AD drugs.

The May 19 grants bring UC San Diego's total to more than $133 million in CIRM funding since the first awards in 2006.
