
Collection of skin biopsies to prepare fibroblasts from patients with Alzheimer's disease and cognitively healthy elderly controls

Grant Award Details

Collection of skin biopsies to prepare fibroblasts from patients with Alzheimer's disease and cognitively healthy elderly controls

Grant Type: Tissue Collection for Disease Modeling

Grant Number: IT1-06589

Project Objective: The project objective is the collection of skin biopsies to prepare fibroblasts from patients with Alzheimer's disease and cognitively healthy elderly controls.
Objective has not changed from the original proposal.

Investigator:

Name:	James Brewer
Institution:	University of California, San Diego
Type:	PI

Disease Focus: Alzheimer's Disease, Neurological Disorders

Award Value: \$643,693

Status: Closed

Progress Reports

Reporting Period: Year 1

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Reporting Period: Year 2

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Reporting Period: Year 3 NCE

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Grant Application Details

Application Title: Collection of skin biopsies to prepare fibroblasts from patients with Alzheimer's disease and cognitively healthy elderly controls

Public Abstract: Alzheimer's Disease (AD), the most common form of dementia in the elderly, affects over 5 million Americans. There are no treatments to slow progression or prevent AD. This reflects limitations in knowledge of mechanisms underlying AD, and in tools and models for early development and testing of treatment. Genetic breakthroughs related to early onset AD led to initial treatment targets related to a protein called amyloid, but clinical trials have been negative. Extensive research links genetic risk to AD, even when the age at onset is after the age of 65. AD affects the brain alone, therefore studying authentic nerve cells in the laboratory should provide the clearest insights into mechanisms and targets for treatment. This has recently become feasible due to advances in programming skin cells into stem cells and then growing (differentiating) them into nerve cells. In this project we will obtain skin biopsies from a total of 220 people with AD and 120 controls, who are extensively studied at the [REDACTED] AD Research Center. These studies include detailed genetic (DNA) analysis, which will allow genetic risks to be mapped onto reprogrammed cells. These derived cells that preserve the genetic background of the person who donated the skin biopsy will be made available to the research community, and have the promise to accelerate studies of mechanisms of disease, understanding genetic risk, new treatment targets, and screening of new treatments for this devastating brain disorder.

Statement of Benefit to California: The proposed project will provide a unique and valuable research resource, which will be stored and managed in California. This resource will consist of skin cells or similar biological samples, suitable for reprogramming, obtained from well-characterized patients with Alzheimer's Disease and cognitively healthy elderly controls. Its immediate impact will be to benefit CIRM-funded researchers as well as the greater research community, by providing them access to critical tools to study, namely nerve cells that can be grown in a dish (cultured) that retain the genetic background of the skin cell donors. This technology to develop and reprogram cells into nerve cells or other cell types results from breakthroughs in stem cell research, many of which were developed using CIRM funding. Alzheimer's Disease affects over 600,000 Californians, and lacks effective treatment. Research into mechanisms of disease, identifying treatment targets, and screening novel drugs will be greatly improved and accelerated through the availability of the resources developed by this project, which could have a major impact on the health of Californians. California is home to world class academic and private research institutes, Biotechnology and Pharmaceutical Companies, many of whom are already engaged in AD research. This project could provide them with tools to make research breakthroughs and pioneer the development of novel treatments for AD.

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