
IVD rejuvenation using iPSC-derived notochordal cells

Grant Award Details

IVD rejuvenation using iPSC-derived notochordal cells

Grant Type: Inception - Discovery Stage Research Projects

Grant Number: DISC1-10643

Project Objective: To identify a new therapeutic agent for IVD regeneration using novel iPS-derived stem cells and injectable microspheres that support differentiation and provide biomechanical strength.

Investigator:

| | |
|---------------------|-----------------------------|
| Name: | Dmitriy Sheyn |
| Institution: | Cedars-Sinai Medical Center |
| Type: | PI |

Disease Focus: Bone or Cartilage Disease

Human Stem Cell Use: iPS Cell

Award Value: \$241,992

Status: Active

Progress Reports

Reporting Period: Year 2

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Grant Application Details

Application Title: IVD rejuvenation using iPSC-derived notochordal cells

Public Abstract:**Research Objective**

To identify a new therapeutic agent for disc regeneration using novel pluripotent stem cells and injectable beads that support differentiation and provide biomechanical strength.

Impact

If this study is successful, we will be able to bring completely new biologically and biomechanically relevant solution to degenerated intervertebral discs.

Major Proposed Activities

- To optimize stem cell delivery, survival, differentiation and matrix secretion in an IVD explant
- To demonstrate the feasibility of stem cell regenerate intervertebral disc in a large animal model (pigs)

Statement of Benefit to California:

"My back hurts, Doc". It's one of the most common complaints heard by Californian family doctors. Traditional there is no good treatment today for disc degeneration. This study comes to promote future stem cell therapy for chronic back pain. Successful stem cell therapy will benefit all Californian residents by reducing workdays lose, medical costs and improving quality of life.

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