Stem Cell Treatment for Oral Inflammatory Disease and Biomarker to Predict Response

Tech ID: 25725 / UC Case 2016-141-0

ABSTRACT

Researchers at the University of California, Davis have developed a stem cell therapy to treat chronic, oral inflammatory disease and a biomarker for predicting whether there will be a response to therapy.

FULL DESCRIPTION

Immune-mediated, oral, mucosal inflammatory diseases cause painful mucosal lesions that markedly reduce quality of life and often require long-term immunosuppressive therapy that has significant associated risks and side effects. Mesenchymal stem cells (MSCs), including those derived from adipose tissue, offer a promising therapy for immune-mediated and inflammatory disorders due to their potent immunomodulatory properties. Autologous adipose-derived MSCs (ASCs) have the added benefit of being non-immunogenic, safe in people and animals, and have been used clinically with no significant adverse reactions reported other than transient fever in humans. While a promising therapeutic, there is no method for predicting response to stem cell therapy for any inflammatory disease (human or veterinary).

Researchers at the University of California, Davis have developed a stem cell therapy to treat chronic, oral inflammatory disease and a biomarker for predicting whether there will be a response to therapy. Proof of concept studies in a reproducible cat model have shown that treatment with ASCs was effective in treating chronic gingivostomatitis (FCGS), a severe, oral mucosal inflammatory disease that closely mirrors human oral inflammatory diseases. These studies also show that a very specific blood immune cell profile, which is easily detected using routine research measurements, can be used to predict therapeutic response to stem cell therapy in this disease. Given that stem cell therapy is expensive and labor intensive, predicting whether patients will be responsive to therapy before treatment offers cost savings and invaluable therapeutic guidance.

APPLICATIONS

- Treatment of immune mediated oral mucosal inflammatory diseases
- Avoids long-term immunosuppressive therapy and associated side effects
- Prediction of therapeutic response to stem cell therapy

FEATURES/BENEFITS

- Non-immunogenic
- Biomarker detection uses routine research tools

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	12,171,786	12/24/2024	2016-141

CONTACT

Victor Haroldsen
haroldsen@ucdavis.edu
tel: 530-752-7717.

INVENTORS

- Arzi, Boaz
- Borjesson, Dori
- Mills Ko, Emily J.

OTHER INFORMATION

KEYWORDS

mesenchymal stem cell (MSC), adipose-derived MSCs, gingivostomatitis, stem cell therapy, oral mucosal inflammation, immunomodulation, personalized medicine

CATEGORIZED AS

- **Medical**
  - Disease: Autoimmune and Inflammation
  - Screening
  - Stem Cell
  - Therapeutics

RELATED CASES

2016-141-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Temporomandibular Joint Replacement (Tmjr) Prosthesis For Dogs And Cats

University of California, Davis
Technology Transfer Office
1 Shields Avenue, Mrak Hall 4th Floor,
Davis,CA 95616

Tel:
530.754.8649
techtransfer@ucdavis.edu
https://research.ucdavis.edu/technology-transfer/
Fax:
530.754.7620