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

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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	Published Application	20210393697	12/23/2021	2016-141

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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

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