HIV Gene Therapy Treatment

Tech ID: 19392 / UC Case 2009-477-0

ABSTRACT

Delivery of gene therapy with a targeting vector specific for cells susceptible to HIV infection.

FULL DESCRIPTION

Currently, HIV patients must undergo chronic drug treatments and often suffer adverse side effects to manage their disease.

Researchers at the University of California, Davis have developed a novel HIV gene therapy that specifically targets those cells in a patient that are susceptible to infection. Current methods of HIV gene therapy require the removal and isolation of specific cells from the patient, introduction of the therapeutic vector into the cells, and administration of these cells back into the patient. This new technology would allow the introduction of the vector directly into the patient without the need of removing and isolating cells in a laboratory or clinic.

Another significant advantage of this HIV gene therapy is its potential to actually cure the disease. The standard treatment for HIV patients consists of a small molecule drug cocktail that must be taken throughout the patient's life to inhibit the replication of the virus. With the proposed therapy, anti-HIV genes are integrated into the target cells' genomes rendering them immune to infection. If enough target cells are successfully treated, the patient could potentially be cured of the infection.

The HIV gene therapy uses recognition of an HIV receptor on the surface of host cells to identify which cells are susceptible to infection. Once recognized, these target cells are transduced with anti-HIV genes that prevent the replication and transmission of the virus.

APPLICATIONS

- Curative gene therapy for HIV infection

FEATURES/BENEFITS

- Potential to cure infected patients without the need of ongoing treatments or the use of expensive laboratory or clinical equipment
- Could be made accessible to doctors and patients without specialized facilities, particularly those in developing countries where HIV infection is widespread

RELATED MATERIALS

- Anderson JS, Walker J, Nolta JA, and Bauer G. 2009. Specific Transduction of HIV-Susceptible Cells for CCR5 Knockdown and Resistance to HIV Infection: A Novel Method for Targeted Gene Therapy and Intracellular Immunization. J Acquir Immune Defic Syndr. [Epub ahead of print]

PATENT STATUS

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OTHER INFORMATION

KEYWORDS

gene therapy, HIV, in vivo transduction, vector

CATEGORIZED AS

- **Medical**
  - Disease: Infectious Diseases
  - Gene Therapy

RELATED CASES

2009-477-0

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,309,535	04/12/2016	2009-477
United States Of America	Issued Patent	8,728,458	05/20/2014	2009-477

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