Gene Therapeutic Vector for KSHV-Associated Diseases

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ABSTRACT

Researchers at the University of California, Davis have developed a gene therapy that selectively targets KSHV-infected tumors through virus-specific sequences and suicide genes to induce tumor cell death.

FULL DESCRIPTION

This technology involves the creation of gene therapy vectors, such as adeno-associated virus (AAV) vectors, which incorporate Kaposi's sarcoma-associated herpesvirus (KSHV) terminal repeat (TR) sequences and suicide genes to specifically target and eliminate KSHV-infected tumor cells. The TR sequences enhance the expression of therapeutic genes, leading to the apoptosis of tumor cells without affecting non-infected cells.

APPLICATIONS

- Gene therapy products for treating Kaposi’s sarcoma and other KSHV-related tumors.
- Combination therapieswith existing cancer drugs to enhance therapeutic efficacy.
- Diagnostic tools for identifying KSHV-infected cells.

FEATURES/BENEFITS

- High specificity for KSHV-infected tumor cells, minimizing damage to healthy cells.
- Utilizes the virus's own regulatory mechanisms to enhance the therapeutic effectiveness.
- Potential for combination with other treatments to further improve outcomes.
- Flexible platform allowing for the incorporation of various suicide genes.
- Provides effective therapies for KSHV-associated malignancies.
- Reduces high mortality rates linked to diseases like primary effusion lymphoma (PEL) and multicentric Castleman’s disease (MCD).
- Overcomes challenges in selectively targeting infected cells, sparing healthy tissues.

PATENT STATUS

Patent Pending

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INVENTORS

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OTHER INFORMATION

KEYWORDS

Adeno-associated virus (AAV), apoptosis, gene therapy, Kaposi's sarcoma, KSHV, lentivirus vector, multicentric Castleman's disease (MCD), primary effusion lymphoma (PEL), suicide gene, terminal repeat (TR) sequence

CATEGORIZED AS

- **Biotechnology**
  - Genomics
  - Health
- **Medical**
  - Disease: Cancer
  - Gene Therapy

- Therapeutics

RELATED CASES

2024-588-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Transcription Active Complex Targeting Cancer Drug From Viral Protein Sequence
- CHD4 Targeting Peptide Isolated From Viral Protein For Cancer Therapeutics
- Use Of Viral Il-6 To Modulate Monocyte Differentiation To Boost Anti-Tumor Immunity
- Cellular Protein CDH4 Inhibiting Peptide

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