Site Directed DNA Editing with Adenosine Deaminases that Act on RNA (ADAR) Enzymes

Tech ID: 33783 / UC Case 2017-753-0

ABSTRACT

Researchers at the University of California, Davis have developed a method and composition for modifying genetic sequences using Adenosine deaminases that act on RNA (ADARs).

FULL DESCRIPTION

Researchers at the University of California Davis have developed an invention that provides effective genome editing tools utilizing adenosine deaminases that act on RNA (ADARs). It allows specific modifications at targeted sites within DNA-RNA hybrid molecules. The technology includes the use of ADAR2 variant polypeptides, fusion proteins comprising an ADAR catalytic domain, and a hybrid nucleic acid binding domain. It holds great potential in preventing and treating various inherited genetic disorders.

APPLICATIONS

- Gene therapy and Genetic Engineering
- Personalized Medicine
- Pharmaceuticals development for genetic disorders
- Bioinformatics and Genomic research

FEATURES/BENEFITS

- Enables specific modifications at target sites within genomes
- Use of ADAR catalytic domain enhances the efficiency of the method
- Promises treatments for a wide range of genetic disorders
- Addresses the limitation of current base editing methods
- Improves the efficiency of homology-directed repair
- Potentially treats genetic disorders by correcting mutations

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,976,309	05/07/2024	2017-753
United States Of America	Issued Patent	11,407,990	08/09/2022	2017-753
Patent Cooperation Treaty	Published Application	2019/104094	07/18/2019	2017-753

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Alpha2-6-Linkage-Specific Sialidase Mutants

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OTHER INFORMATION

KEYWORDS

DNA, RNA, ADAR, modification

CATEGORIZED AS

- **Medical**
  - Delivery Systems
- **Research Tools**
  - Nucleic Acids/DNA/RNA

RELATED CASES

2017-753-0

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