CRISPR-CAS EFFECTOR POLYPEPTIDES AND METHODS OF USE THEREOF ("CAS-VARIPHI")

Tech ID: 32134 / UC Case 2021-027-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20230348872	11/02/2023	2021-027
European Patent Office	Published Application	4211240 A0	07/19/2023	2021-027

BRIEF DESCRIPTION

CRISPR-Cas systems include Cas proteins, which are involved in acquisition, targeting and cleavage of foreign DNA or RNA, and a guide RNA(s), which includes a segment that binds Cas proteins and a segment that binds to a target nucleic acid. For example, Class 2 CRISPR-Cas systems comprise a single Cas protein bound to a guide RNA, where the Cas protein binds to and cleaves a targeted nucleic acid. The programmable nature of these systems has facilitated their use as a versatile technology for use in modification of target nucleic acid.

UC Berkeley researchers have discovered a novel family of proteins (CasVariPhi) that utilize a guide RNA to perform RNA-directed cleavage of nucleic acids. Viral and microbial (cellular) genomes were assembled from a variety of environmental and animal microbiome sources, and variants of a novel and previously unknown Cas protein family were uncovered from the sequences decoded.

SUGGESTED USES

- gene editing of bacterial, archaeal, and eukaryotic cells
- transcription repression of specific genes using inactivated CasVariPhi
- targeting of proteins bound to CasVariPhi to a specific locus of a genome
- diagnostic applications via trans-cleavage activity

CONTACT

Terri Sale
terri.sale@berkeley.edu
tel: 510-643-4219.

INVENTORS

- Doudna, Jennifer A.

OTHER INFORMATION

KEYWORDS

CRISPR, CasVariPhi, gene editing

CATEGORIZED AS

- **Biotechnology**
  - Genomics
- **Medical**
  - Diagnostics
  - Research Tools
  - Therapeutics
- **Research Tools**
  - Nucleic Acids/DNA/RNA

RELATED CASES

2021-027-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- COMPOSITIONS AND METHODS FOR IDENTIFYING HOST CELL TARGET PROTEINS FOR TREATING RNA VIRUS INFECTIONS
- Genome Editing via LNP-Based Delivery of Efficient and Stable CRISPR-Cas Editors
- Tissue-Specific Genome Engineering Using CRISPR-Cas9
- Type III CRISPR-Cas System for Robust RNA Knockdown and Imaging in Eukaryotes
- Cas9 Variants With Altered DNA Cleaving Activity
- Cas12-mediated DNA Detection Reporter Molecules
- Improved guide RNA and Protein Design for CasX-based Gene Editing Platform
- Cas13a/C2c2 - A Dual Function Programmable RNA Endoribonuclease
- Miniature Type VI CRISPR-Cas Systems and Methods of Use

- RNA-directed Cleavage and Modification of DNA using CasY (CRISPR-CasY)
- CasX Nickase Designs, Tans Cleavage Designs & Structure
- In Vivo Gene Editing Of Tau Locus Via Liponanoparticle Delivery
- Methods and Compositions for Modifying a single stranded Target Nucleic Acid
- A Dual-RNA Guided CasZ Gene Editing Technology
- A Protein Inhibitor Of Cas9
- RNA-directed Cleavage and Modification of DNA using CasX (CRISPR-CasX)
- Compositions and Methods for Genome Editing
- IS110 and IS1111 Family RNA-Guided Transposons
- Methods to Interfere with Prokaryotic and Phage Translation and Noncoding RNA
- Variant Cas12a Protein Compositions and Methods of Use
- In Vitro and In Vivo Genome Editing by LNP Delivery of CRISPR Ribonucleoprotein
- CRISPR CASY COMPOSITIONS AND METHODS OF USE
- Single Conjugative Vector for Genome Editing by RNA-guided Transposition
- Improved Cas12a Proteins for Accurate and Efficient Genome Editing
- CRISPR-CAS EFFECTOR POLYPEPTIDES AND METHODS OF USE THEREOF
- Engineered/Variant Hyperactive CRISPR CasPhi Enzymes And Methods Of Use Thereof
- Methods Of Use Of Cas12L/CasLambda In Plants
- Type V CRISPR/CAS Effector Proteins for Cleaving ssDNA and Detecting Target DNA
- THERMOSTABLE RNA-GUIDED ENDONUCLEASES AND METHODS OF USE THEREOF (GeoCas9)
- Variant TnpB and wRNA Proteins
- Efficient Site-Specific Integration Of New Genetic Information Into Human Cells
- Class 2 CRISPR/Cas COMPOSITIONS AND METHODS OF USE
- Compositions and Methods of Use for Variant Csy4 Endoribonucleases
- Methods and Compositions for Controlling Gene Expression by RNA Processing

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University of California, Berkeley Office of Technology Licensing
2150 Shattuck Avenue, Suite 510, Berkeley,CA 94704
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