CRISPR-CAS EFFECTOR POLYPEPTIDES AND METHODS OF USE THEREOF

Tech ID: 30175 / UC Case 2019-102-0

PATENT STATUS

Country	Type	Number	Dated	Case
China	Issued Patent	ZL202310283408.3	11/28/2025	2019-102
Australia	Issued Patent	2020231380	10/30/2025	2019-102
Mexico	Issued Patent	428066	09/29/2025	2019-102
United States Of America	Issued Patent	12,365,887	07/22/2025	2019-102
United States Of America	Issued Patent	12,312,616	05/27/2025	2019-102
United States Of America	Issued Patent	12,275,966	04/15/2025	2019-102
Japan	Issued Patent	7629474	02/04/2025	2019-102
Australia	Issued Patent	2023201675	08/22/2024	2019-102
United States Of America	Issued Patent	11,739,309	08/29/2023	2019-102
United States Of America	Issued Patent	11,685,909	06/27/2023	2019-102
Japan	Issued Patent	7239725	03/06/2023	2019-102
United States Of America	Issued Patent	11,578,313	02/14/2023	2019-102
United States Of America	Issued Patent	11,530,398	12/20/2022	2019-102
United Kingdom	Issued Patent	2595606	09/21/2022	2019-102
United States Of America	Issued Patent	11,377,646	07/05/2022	2019-102
Germany	Issued Patent	212020000516.8	01/17/2022	2019-102
United States Of America	Published Application	20240026321	01/25/2024	2019-102
United States Of America	Published Application	20230332123	10/19/2023	2019-102
United States Of America	Published Application	20230323321	10/12/2023	2019-102
European Patent Office	Published Application	4219700 A1	08/02/2023	2019-102
Mexico	Published Application	MX/A/23/003255	05/15/2023	2019-102
Hong Kong	Published Application	40064319 A	06/30/2022	2019-102
European Patent Office	Published Application	3935156 A0	01/12/2022	2019-102
United States Of America	Published Application	20210324356	10/21/2021	2019-102
Canada	Published Application			2019-102

BRIEF DESCRIPTION

The CRISPR-Cas system is now understood to confer bacteria and archaea with acquired immunity against phage and viruses. CRISPR-Cas systems consist of Cas proteins, which are involved in acquisition, targeting and cleavage of foreign DNA or RNA, and a CRISPR array, which includes direct repeats flanking short spacer sequences that guide Cas proteins to their targets. Class 2 CRISPR-Cas are streamlined versions in which a single Cas protein bound to RNA is responsible for binding to and cleavage of a targeted sequence. The programmable nature of these minimal systems has facilitated their use as a versatile technology that is revolutionizing the field of genome manipulation. Current CRISPR Cas technologies are based on systems from cultured bacteria, leaving untapped the vast majority of organisms that have not been isolated. There is a need in the art for additional Class 2 CRISPR/Cas systems (e.g., Cas protein plus guide RNA combinations).

UC Berkeley researchers discovered a new type of Cas 12 protein, CasPhi. Site-specific binding and/or cleavage of a target nucleic acid (e.g., genomic DNA, ds DNA, RNA, etc.) can occur at locations (e.g., target sequence of a target locus) determined by base-pairing complementarity between the Cas12 guide RNA (the guide sequence of the Cas12 guide RNA) and the target nucleic acid. Similar to CRISPR Cas9, Cas12 enzymes are expected to have a wide variety

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OTHER INFORMATION

KEYWORDS

CRISPR, Cas 12, Cas12J, CasPhi

CATEGORIZED AS

» **Agriculture & Animal Science**

» Transgenics

» **Medical**

» Gene Therapy

» Research Tools

» Screening

» Therapeutics

» **Research Tools**

» Nucleic Acids/DNA/RNA

» **Veterinary**

» Diagnostics

» Therapeutics

RELATED CASES

2019-102-0

of applications in genome editing and nucleic acid manipulation.

SUGGESTED USES

- Genome editing in plants
- Research tools

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
- Compositions and Methods for Delivering Molecular Cargo to Cells
- 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)
- Generation of Chimeric RNA with Type III CRISPR-Cas
- 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
- 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
- Compositions and Methods for VIPR-Based Nucleic Acid Targeting
- 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
- Immune Cell-Mediated Intercellular Delivery Of Biomolecules
- Methods and Compositions for Controlling Gene Expression by RNA Processing

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