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

Tech ID: 32114 / UC Case 2021-018-0

PATENT STATUS

Patent Pending

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 (CasOmega) 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 CasOmega
» targeting of proteins bound to CasOmega to a specific locus of a genome
» diagnostic applications via trans-cleavage activity

CONTACT

Terri Sale
terri.sale@berkeley.edu
tel: View Phone Number.

INVENTORS

» Doudna, Jennifer A.

OTHER INFORMATION

KEYWORDS

CRISPR, CasOmega, gene editing

CATEGORIZED AS

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

RELATED CASES

2021-018-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

» Methods and Compositions for Using Argonaute to Modify a Single-Stranded Target Nucleic Acid
» COMPOSITIONS AND METHODS FOR IDENTIFYING HOST CELL TARGET PROTEINS FOR TREATING RNA VIRUS INFECTIONS
» 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
» Cas3a/C2c2 - A Dual Function Programmable RNA Endonuclease
» Methods For High Signal-To-Noise Imaging Of Chromosomal Loci In Cells Using Fluorescent Cas9
» A Dual-RNA Guided Cas2 Gene Editing Technology
» MODULATORS OF TYPE VI-D CRISPR-CAS EFFECTOR POLYPEPTIDES AND METHODS OF USE THEREOF
» CRISPR-CAS EFFECTOR POLYPEPTIDES AND METHODS OF USE THEREOF ("Cas-VariPhi")
» A Protein Inhibitor Of Cas9
» Small Cas9 Protein Inhibitor
» Split-Cas9 For Regulatable Genome Engineering
» Decorating Chromatin for Precise Genome Editing Using CRISPR
» Optimized Virus-like Particles for Cas9 RNPs & Transgene/HDR Template Delivery
» CRISPR-CAS EFFECTOR POLYPEPTIDES AND METHODS OF USE THEREOF ("Cas-Theta")
» COMPOSITIONS AND METHODS FOR INCREASING HOMOLOGY-DIRECTED REPAIR
» CRISPR CASY COMPOSITIONS AND METHODS OF USE