MINIATURE TYPE VI CRISPR-CAS SYSTEMS AND METHODS OF USE

Tech ID: 32413 / UC Case 2021-183-0

PATENT STATUS

Patent Pending

BRIEF DESCRIPTION

This technology includes new variants of CRISPR-Cas proteins from metagenomic datasets isolated from different environmental and microbiome environments that are distantly related to other CRISPR-Cas systems that utilize a guide RNA (gRNA) to perform RNA-directed cleavage of nucleic acids that can be applicable for RNA editing, diagnostics, and more. The enzyme is activated by the binding of an RNA target complementary to the spacer sequence, in order to activate cis-cleavage of the RNA target and/or unleash trans-cleavage activity against RNA substrates. This invention is especially useful for transcriptome editing as well as detecting RNA molecules, but can also detect DNA substrates upon transcription.

SUGGESTED USES

Possible applications of this invention include:

- transcript knockdown
- transcriptome editing by fusions to ADAR proteins
- detecting RNA molecules
- detection of DNA substrates upon transcription

ADVANTAGES

OTHER INFORMATION

KEYWORDS

CRISPR, Cas, transcriptome editing

CATEGORIZED AS

- Biotechnology
- Genomics
- Medical
- Diagnostics
- Gene Therapy
- Other
- Research Tools
- Nucleic Acids/DNA/RNA

RELATED CASES

2021-183-0

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
- Lentivirus-like Particle Delivery of CRISPR-Cas9 & Guide RNA for Gene Editing
- 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
- CasX Nickase Designs, Tans Cleavage Designs & Structure
- A Dual-RNA Guided CasZ Gene Editing Technology
- CRISPR-CAS EFFECTOR POLYPEPTIDES AND METHODS OF USE THEREOF ("Cas-VariPhi")
- Modifications To Cas9 For Passive-Delivery Into Cells
- A Protein Inhibitor Of Cas9
- Split-Cas9 For Regulatable Genome Engineering
- NANOPORE MEMBRANE DEVICE AND METHODS OF USE THEREOF
- Optimized Virus-like Particles for Cas9 RNPs & Transgene/HDR Template Delivery
- Protein Inhibitor of Type VI-B CRISPR-Cas System
- COMPOSITIONS AND METHODS FOR INCREASING HOMOLOGY-DIRECTED REPAIR
- CRISPR CASY COMPOSITIONS AND METHODS OF USE
- Single Conjugative Vector for Genome Editing by RNA-guided Transposition