PROTEIN INHIBITOR OF TYPE VI-B CRISPR-CAS SYSTEM

Tech ID: 32275 / UC Case 2021-101-0

PATENT STATUS
Patent Pending

BRIEF DESCRIPTION
The inventors have discovered the first protein inhibitor of the type VI-B CRISPR-Cas system. By controlling this CRISPR system, one could possibly ameliorate the toxicity and off-target cleavage activity observed with the use of the type VI CRISPR system. Moreover, these proteins can also serve as an antidote for instances where the use of CRISPR-Cas technology poses a safety risk. Additionally, this technology can also be used for engineering genetic circuits in mammalian cells. This finding is of potential importance to many companies in the CRISPR space.

SUGGESTED USES
This technology will enable safe and precise use of CRISPR-Cas type VI-B.

The invention can also be used for engineering gene circuits in mammalian cells.

ADVANTAGES
Many Anti-CRISPRs have been discovered for multiple DNA-targeting systems but none have been discovered for the RNA-targeting type VI-B CRISPR system that is widely being used for biotechnological applications in research, healthcare, agriculture, and vector control.

Anti-CRISPRs are biomolecules that inhibit nucleic-acid targeting and/or cleavage by CRISPR-Cas systems.

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OTHER INFORMATION
KEYWORDS
CRISPR

CATEGORIZED AS
» Agriculture & Animal Science
- Animal Science
- Other
- Biotechnology
- Genomics
- Environment
- Other
- Imaging
- Medical
- Other
- Medical
- Imaging
- Other
- Research Tools
- Research Tools
- Other
- Security and Defense
- Other

RELATED CASES
2021-101-0

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
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 Endonuclease
- Methods For High Signal-To-Noise Imaging Of Chromosomal Loci In Cells Using Fluorescent Cas9
- A Dual-RNA Guided CasZ Gene Editing Technology
- CRISPR-CAS EFFECTOR POLYPEPTIDES AND METHODS OF USE THEREOF ("Cas-VarPhi")
- A Protein Inhibitor Of Cas9
- Small Cas9 Protein Inhibitor
- 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
- 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
- Single Conjugative Vector for Genome Editing by RNA-guided Transposition
- CRISPR-CAS EFFECTOR POLYPEPTIDES AND METHODS OF USE THEREOF ("Cas-Omega")
- Protein Inhibitor of Type II-A CRISPR-Cas System
- 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)
- Structure-Guided Methods Of Cas9-Mediated Genome Engineering
- Endonucleases For Rna Detection And Analysis
- Efficient Site-Specific Integration Of New Genetic Information Into Human Cells
- CRISPR-CAS EFFECTOR POLYPEPTIDES AND METHODS OF USE THEREOF (CasGamma)
- Class 2 CRISPR/Cas COMPOSITIONS AND METHODS OF USE
- Compositions and Methods of Use for Variant Cas4 Endonucleases
- Identification Of Sites For Internal Insertions Into Cas9
- Chimeric Cas9 Variants With Novel Engineered Enzymatic Activities
- Small Molecule Assisted Cell Penetrating Cas9 RNP Delivery
- Methods and Compositions for Controlling Gene Expression by RNA Processing