A PROTEIN INHIBITOR OF CAS9

Tech ID: 29638 / UC Case 2019-008-0

PATENT STATUS

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<td>Published Application</td>
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<td>WO2020055748</td>
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Additional Patents Pending

BRIEF DESCRIPTION

Clustered Regularly Interspaced Short Palindromic Repeat (CRISPR)/Cas9 nucleases, when complexed with a guide RNA, effect genome editing in a sequence-specific manner. RNA-guided Cas9 has proven to be a versatile tool for genome engineering in multiple cell types and organisms. There is a need in the art for additional compositions and methods for controlling genome editing activity of CRISPR/Cas9.

UC Berkeley researchers have discovered a new protein that is able to inhibit the Cas9 protein from Staphylococcus aureus (SauCas9). SauCas9 is smaller than the frequently used Cas9 from Streptococcus pyogenes, which has a number of benefits for delivery. The inhibitor is a small protein from a phage and is capable of strongly inhibiting gene editing in human cells.

SUGGESTED USES

» Gene editing

ADVANTAGES

» Limiting off-target editing, or other applications where reduced activity or rapid inhibition is desired

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

» 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
» Type III CRISPR-Cas System for Robust RNA Knockdown and Imaging in Eukaryotes
» 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
» CasX Nickase Designs, Tans Cleavage Designs & Structure
» A Dual-RNA Guided Cas2 Gene Editing Technology
» CRISPR-CAS EFFECTOR POLYPEPTIDES AND METHODS OF USE THEREOF (“Cas-VariPhi”)
» Modifications To Cas9 For Passive-Delivery Into Cells
» 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
» 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
» Engineering Cas12a Genome Editors with Minimized Trans-Activity
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
Endoribonucleases For RNA Detection And Analysis
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
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