ENGINEERING CAS12A GENOME EDITORS WITH MINIMIZED TRANS-ACTIVITY

Tech ID: 32640 / UC Case 2022-071-0

PATENT STATUS

<table>
<thead>
<tr>
<th>Country</th>
<th>Type</th>
<th>Number</th>
<th>Dated</th>
<th>Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patent Cooperation Treaty</td>
<td>Published Application</td>
<td>WO 2023/147240</td>
<td>08/03/2023</td>
<td>2022-071</td>
</tr>
</tbody>
</table>

Additional Patent Pending

BRIEF DESCRIPTION

The inventors engineered a set of LbCas12a mutants through rational design and directed evolution. The engineered mutants can function as efficient genome editors with minimized trans-activity.

SUGGESTED USES

Suggested uses for the engineered LbCas12a mutants with minimized trans-activity include:

- reduced off-target genome editing in eukaryote cells.
- development into other molecular tools for genome editing.

ADVANTAGES

RELATED MATERIALS

INVENTORS

» Doudna, Jennifer A.

OTHER INFORMATION

KEYWORDS

- genome editing

CATEGORIZED AS

» Biotechnology
» Genomics
» Research Tools
» Animal Models
» Cell Lines
» Expression System
» Other

RELATED CASES

2022-071-0

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
- Genome Editing via LNP-Based Delivery of Efficient and Stable CRISPR-Cas Editors
- 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 Endoribonuclease
- RNA-directed Cleavage and Modification of DNA using CasY (CRISPR-CasY)
- 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

RNA-directed Cleavage and Modification of DNA using CasX (CRISPR-CasX)

Compositions and Methods for Genome Editing

Split-Cas9 For Regulatable Genome Engineering

NANOPORE MEMBRANE DEVICE AND METHODS OF USE THEREOF

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

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

CRISPR-Cas Effector Polypeptides and Methods of Use Thereof

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

Small Molecule Assisted Cell Penetrating Cas9 RNP Delivery

Methods and Compositions for Controlling Gene Expression by RNA Processing

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