COMPOSITIONS AND METHODS FOR INCREASING HOMOLOGY-DIRECTED REPAIR

Tech ID: 32010 / UC Case 2020-147-0

PATENT STATUS
Patent Pending

BRIEF DESCRIPTION
Molecular self-assembly with scaffolded DNA origami offers a route for folding nucleic acid molecules in user-defined ways, to generate DNA nanostructures. DNA nanostructures have a single-stranded DNA that is folded into distinct shapes via oligonucleotides termed “staples.” Engineered nuclease systems can be used to cleave a target DNA at a specified location. Examples of engineered nuclease systems include TALENs, zinc finger nucleases, mega-nucleases, and CRISPR-Cas systems. Introduction of a break in a nucleic acid (e.g. genome) can facilitate the introduction of a donor nucleic acid.

UC Berkeley researchers have discovered compositions comprising a gene-editing polypeptide, a single-stranded donor DNA, and one or more staple oligonucleotides which can be used for gene editing.

SUGGESTED USES
» Gene editing

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
» 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 Cas2 Gene Editing Technology
» MODULATORS OF TYPE V1-D CRISPR-CAS EFFECTOR POLYPEPTIDES AND METHODS OF USE THEREOF
» 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
» 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")
» 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")
» CRISPR-CAS EFFECTOR POLYPEPTIDES AND METHODS OF USE THEREOF
» Engineered/Variant Hyperactive CRISPR CasPhi Enzymes And Methods Of Use Thereof
» 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
» Endonuclease 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 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