IN VIVO GENE EDITING OF TAU LOCUS VIA LIPONANOPARTICLE DELIVERY

Tech ID: 33310 / UC Case 2024-026-0

PATENT STATUS

Patent Pending

BRIEF DESCRIPTION

Delivery technologies such as lipid nanoparticles (LNP) offer significant advantages over the delivery of free RNA for various RNA therapeutic, vaccine, and basic science applications. UC Berkeley researchers developed a new class of lipid nanoparticle (LNP) which is effective in delivering various types of nucleic acids in different tissues. The LNP was successfully tested in in-vivo mouse models and therefore poses a significant promise in the gene editing field. The lipid formulation was packaged together with CRISPR Cas9 and a gRNA targeting the endogenous Tau locus. Tau dysregulation is a pathological feature of Alzheimer's disease, thus the invention provides a means to intervene in the development of pathological states associated with Tau aggregate formation.

SUGGESTED USES

» therapeutic applications, particularly ones targeting the Tau locus (e.g., Alzheimer's disease)

CONTACT

Terri Sale
terri.sale@berkeley.edu
tel: 510-643-4219.

INVENTORS

» Doudna, Jennifer A.

OTHER INFORMATION

CATEGORIZED AS

» Biotechnology
» Genomics
» Medical
» Disease: Central Nervous System
» Therapeutics

RELATED CASES

2024-026-0

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