HIGH-YIELD PRODUCTION OF BASE EDITOR ENZYMES VIA CONJUGATION

Tech ID: 33734 / UC Case 2025-027-0

PATENT STATUS

Patent Pending

BRIEF DESCRIPTION

Programmable base editors are a class of genome editing effector proteins that can make precise, targeted changes to DNA base pairs in a narrow window of genomic sequence without reliance on double-stranded breaks in chromosomal DNA. Base editor proteins include a deaminase fused to a CRISPR-Cas effector protein (e.g., nCas9). Base editor proteins are challenging to produce in high yields via recombinant expression in E. coli. This has limited its clinical use to mRNA/gRNA delivery; this is in stark contrast to Cas9 nuclease, which has been used in multiple clinical trials in its protein-based RNP format. There is a need for base editor proteins that are highly active and can be produced with high yield. Such is provided by the compositions and methods described herein.

UC Berkeley researchers have overcome the limitations associated with producing a CRISPR-Cas base editor by creating a CRISPR-Cas fusion protein with the deaminase fusion protein.

SUGGESTED USES

- Production of fully functional base editor protein for in vitro and/or in vivo base editing.
- Gene editing

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Methods For Selectively Disabling Oncogenes
- Nuclear Localization Signals Inside Cas9 To Enhance Genome Editing

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OTHER INFORMATION

CATEGORIZED AS

- **Medical**
  - Gene Therapy
  - Research Tools
  - Therapeutics

RELATED CASES

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