

LAMBDA RED-CAST FOR IMPROVED EDITING EFFICIENCY IN GRAM NEGATIVE BACTERIA

Tech ID: 33700 / UC Case 2025-019-0

PATENT STATUS

Country	Type	Number	Dated	Case
Patent Cooperation Treaty	Published Application	WO 2026/059860	03/19/2026	2025-019

BRIEF DESCRIPTION

A method for improving the efficiency of genome editing in Gram-negative bacteria using a CRISPR-associated transposase (CAST) system. Traditional methods for genetic modification in these bacteria are often inefficient and complex. Researchers at UC Berkeley have developed a system that combines a CAST complex, which recognizes specific DNA sequences and inserts a transposon, with a CAST modulator. This modulator significantly enhances the system's editing efficiency, making it a powerful tool for precise and efficient genetic manipulation in Gram-negative bacteria.

SUGGESTED USES

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Drug discovery: Can be used to create modified bacterial strains for producing novel therapeutics or for screening new drugs.

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Biofuel production: Could be used to engineer bacteria to more efficiently produce biofuels.

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Bioremediation: Useful for modifying bacteria to degrade pollutants and clean up contaminated environments.

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Agricultural applications: Can be used to create improved crop-related bacteria, such as those that promote plant growth or protect against pests.

ADVANTAGES

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Improved Efficiency: The addition of a CAST modulator significantly enhances the efficiency of genome editing compared to systems without it.

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Precision: The system allows for precise, targeted insertion of genetic material.

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Broad Applicability: Effective in Gram-negative bacteria, a class of organisms that are often challenging to modify genetically.

RELATED MATERIALS

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INVENTORS

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OTHER INFORMATION

CATEGORIZED AS

» **Biotechnology**

» Genomics

» Other

» **Medical**

» Gene Therapy

» **Research Tools**

» Other

» Vectors

RELATED CASES

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ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

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