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High-Throughput Discovery Of Bipartite Or Tripartite Crispr-Based Epigenetic Editors

Tech ID: 33162 / UC Case 2023-016-0

TECHNOLOGY DESCRIPTION

The invention is a novel platform for identifying and characterizing programmable gene modulators (PGM). The epigenome editor discovery platform has potential utility in both therapeutic development/discovery and as a research tool.

INVENTION NOVELTY

Currently, conventional methods of epigenome editor discovery require time and labor-intensive construct development, which is typically performed in low-throughput arrayed formats. The platform bypasses current time/labor constraints (and without reliance on construct barcodes) to facilitate the identification of an optimal gene modulator in a single experiment.

ADVANTAGES

- By leveraging dCas9, the platform can be used to target any genetic element in the genome, including but not limited to, transcribed or untranscribed genes (which could be protein coding or non-coding) as well as gene regulatory elements such as enhancers, insulators and topology modulators
- Potential utilization in a variety of biological models, including but not limited to, mammalian cell lines, primary cells, and in vivo models.
- Approach
 - o provides time and labor savings through bypassing construct development
 - o leverages sequencing and analysis methods that enable the identification of active editors without reliance on construct barcodes resulting in recovery of truly active constructs
 - o enables identification of an optimal PGM for a specific genetic element or biological model of choice within a single experiment

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OTHER INFORMATION

KEYWORDS

CRISPR, Epigenome,
Epigenetic, Gene modulator

CATEGORIZED AS

- ▶ Medical
 - ▶ Research Tools
 - ▶ Therapeutics
- ▶ Research Tools
 - ▶ Nucleic Acids/DNA/RNA

RELATED CASES

2023-016-0

APPLICATION

- Use in identifying optimal programmable epigenetic editors
- Therapeutic use of optimal epigenetic editors
- Research tool

LOOKING FOR PARTNERS

To commercialize the technology

STAGE OF DEVELOPMENT

Proof of concept

DATA AVAILABILITY

Data available under CDA

PATENT STATUS

Patent Pending

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