METHODS FOR SELECTIVELY DISABLING ONCOGENES

Tech ID: 33928 / UC Case 2025-091-0

PATENT STATUS

Patent Pending

BRIEF DESCRIPTION

Most tumors are extremely complex, having many oncogene drivers and are, therefore, not as amenable to a CRISPR-mediated therapies. Pediatric low-grade glioma (pLGG) is a type of brain cancer that arises during childhood. Some interventions exist, including surgery and inhibitor drugs, but there is no cure for pLGG. In contrast to most types of cancer (which feature a host of driver oncogenes), pLGG tumors tend to arise due to a single driver oncogene mutation. This aspect makes pLGG a potential target for a genome editing intervention. Because CRISPR enzymes can precisely discriminate between wild-type and mutant sequences in a single cell, enzymes such as Cas9 can target a mutant oncogene site without impacting the corresponding wild-type locus in a non-cancer cell.

UC Berkeley researchers have developed a CRISPR-based strategies for anti-cancer genome editing. The invention consists of a suite of genome editing strategies with the capacity to selectively inactivate the oncogene underlying tumor pathology, for example, mutations in pLGG. Deployed via a delivery strategy with the capacity for broad genome editing of brain cells, our strategy will have the capacity to halt – and potentially reverse – tumor growth.

SUGGESTED USES

- direct targeting tumors (e.g., of glioma brain tumors and some skin cancers)

ADVANTAGES

- a curative therapy that involves a one-time administration of reagents
- minimized risk of side effects while attaining levels of anti-tumor efficacy that far surpasses the standard of care

CONTACT

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

INVENTORS

- Wilson, Ross C.

OTHER INFORMATION

CATEGORIZED AS

- **Biotechnology**
  - Genomics
- **Medical**
  - Gene Therapy
  - Therapeutics

RELATED CASES

2025-091-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- High-Yield Production Of Base Editor Enzymes Via Conjugation
- Nuclear Localization Signals Inside Cas9 To Enhance Genome Editing