COMPOSITIONS AND METHODS FOR DRIVING CELL COMPETITION TO KILL CANCER CELLS

Tech ID: 34250 / UC Case 2026-021-0

PATENT STATUS

Patent Pending

BRIEF DESCRIPTION

Genetic therapies often suffer from low delivery efficiency to cancer cells. To address this, UC Berkeley researchers designed a therapy delivery system that targets and kills cancer cells despite low delivery efficiencies. In this system, nucleic acid cargo encoding a secreted toxin and non-secreted anti-toxin are delivered to cancer cells. The small population of cells that receives and expresses the cargo survives due to the presence of the anti-toxin, while the majority of cancer cells that do not have the cargo die from the secreted toxin. The cargo-containing cells are subsequently eliminated using an encoded kill-switch. The invention also describes screening methods in organoids and methods of using compounds identified in screens. When used in vivo, this technology presents an attractive method for curing solid tumor cancers via gene therapy.

SUGGESTED USES

» Gene therapy for solid tumor cancers

» Gene therapy research methods for organoids

» Discovery and usage of effective toxin/anti-toxin systems for treating cancer

ADVANTAGES

» Takes advantage of clonal competition

» Organoid-adapted screening system for toxin/anti-toxin compounds to treat cancer

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

▶ Anthracycline Derivatives And Their Therapeutic Applications

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OTHER INFORMATION

CATEGORIZED AS

» **Medical**

» Delivery Systems

» Disease: Cancer

» Research Tools

» Therapeutics

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