IMPROVED VEHICLES FOR ENDOSOMAL ESCAPE

Tech ID: 33763 / UC Case 2025-037-0

PATENT STATUS

Patent Pending

BRIEF DESCRIPTION

This invention addresses the challenge of delivering macromolecules and other therapeutic cargo into the cell's cytoplasm by overcoming the endosomal membrane barrier. The innovation, developed by UC Berkeley researchers, involves improved versions of the ZF5.3 peptide. These improved peptide variants significantly enhance the efficiency of endosomal escape. This advancement provides a more effective and reliable method for intracellular delivery compared to existing alternatives, which often suffer from low efficiency or significant toxicity.

SUGGESTED USES

- Gene therapy: Delivering DNA, RNA, and other nucleic acids into target cells.
- Drug delivery: Improving the intracellular delivery of small molecules and large therapeutic proteins.
- Vaccines: Enhancing the delivery of antigens for more effective immunization.
- Research tools: Serving as a tool for studying cell biology and developing new intracellular therapies.

ADVANTAGES

- Versatility: The peptides can be fused with various cargo domains and delivery vehicles, making the technology widely applicable.
- Improved Safety: The innovative design of the peptide variants may reduce the toxicity often associated with other endosomal escape strategies.
- Broad Applicability: This technology has potential uses in a wide range of fields, including gene therapy, drug delivery, and vaccine development.

RELATED MATERIALS

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INVENTORS

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OTHER INFORMATION

KEYWORDS

macromolecule, cytoplasm, endosome, phospholipid, peptide, cytosol, proteins, nucleic acids

CATEGORIZED AS

- **Biotechnology**
  - Genomics
  - Health
  - Other
- **Medical**
  - Delivery Systems
  - Gene Therapy
  - Other
  - Research Tools
  - Therapeutics
  - Vaccines
- **Nanotechnology**
  - NanoBio
  - Other
- **Research Tools**
  - Nucleic Acids/DNA/RNA

» Other

» Protein Synthesis

» Reagents

RELATED CASES

2025-037-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Ribosomal Synthesis Of Ketone-Containing Peptide Backbone Via O To C Acyl Shift
- Methods To Generate Novel Acyl-Trna Species
- Nuclear Delivery and Transcriptional Repression with a Cell-penetrant MeCP2

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