Design of Enhanced Endosomal Escape Domains for Delivery of Macromolecules into Cells

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BACKGROUND

Macromolecular peptide, protein and oligonucleotide therapeutics have great potential to treat human disease; however, due to their size, they have no ability to enter cells. Peptide/Protein transduction domains (PTDs), also called cell-penetrating peptides (CPPs), promote uptake of macromolecules via endosomal macropinocytosis. However, overcoming the rate-limiting step of endosomal escape remains the major challenge.

TECHNOLOGY DESCRIPTION

UC San Diego researchers have designed an Endosomal Escape Domain (EED) that resulted in a significant enhancement of cytoplasmic delivery in the absence of cytotoxicity. In addition they developed an assay to measure transduction into the cytoplasm to compare and contrast PTDs/CPPs.

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OTHER INFORMATION

KEYWORDS

drug delivery, macromolecule, endosomal escape, membrane transduction

CATEGORIZED AS

- **Medical**
  - Delivery Systems
  - Research Tools

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