NEW ACID DEGRADABLE LIPIDS BASED ON SELF ASSEMBLING PEPTIDES

Tech ID: 33002 / UC Case 2023-059-0

PATENT STATUS

Country	Type	Number	Dated	Case
Patent Cooperation Treaty	Reference for National Filings	WO 2024/187160	09/12/2024	2023-059

Patent Pending

BRIEF DESCRIPTION

Solid lipid nanoparticles are useful for delivering mRNA, and have potential to treat a wide variety of diseases. SLNs contain a PEGylated lipid, which is generally in the 1-5% range and is needed to maintain SLN stability, size, tissue diffusion and lower toxicity. However, excessive PEGylation also results in lower cell uptake and endosomal disruption. This paradox has limited the efficacy of SLNs, and is termed the “PEG dilemma”. Acid degradable PEGlipids have great potential for overcoming the PEG dilemma, but have been challenging to develop due to the synthetic challenges associated with working with acetals and their instability at pH 7.4.

UC Berkeley researchers have developed a new lipid composed of a self-assembling peptide, an acid degradable lipid and a PEG chain, which can be used to transfect a variety of biomolecules into cells.

SUGGESTED USES

» transfect a variety of biomolecules into cells

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INVENTORS

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OTHER INFORMATION

KEYWORDS

LNP, lipid nanoparticle, SLN, transfection

CATEGORIZED AS

» **Biotechnology**
» Genomics
» **Medical**
» Delivery Systems
» Gene Therapy
» Research Tools
» Therapeutics
» **Research Tools**
» Nucleic Acids/DNA/RNA

RELATED CASES

2023-059-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Small Molecule Endosomal Disruptor for Biotherapeutic Delivery
- Quaternized-Zwitterionic Ionizable Lipids
- Compositions and Methods for Identifying Functional Nucleic Acid Delivery Vehicles
- Acid Degradable Solid Lipid Nanoparticles

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