# NEW ACID DEGRADABLE LIPIDS BASED ON SELF ASSEMBLING PEPTIDES

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## PATENT STATUS

| Country | Type | Number | Dated | Case |
|---|---|---|---|---|
| Patent Cooperation Treaty | Published Application | WO 2024/187160 | 09/12/2024 | 2023-059 |

Additional 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

## CONTACT

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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
- Compositions and Methods for Identifying Functional Nucleic Acid Delivery Vehicles
- Aromatic 2-nitrosulfonyl fluoride antibiotics
- Lipid Nanopartices with non-immunogenic Poly (ethylene glycol)
- Acid Degradable Solid Lipid Nanoparticles
- Synthesis Of New Cationic And Ionizable Lipid Nanoparticles (LNPs) via Solid Phase Peptide Synthesis

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