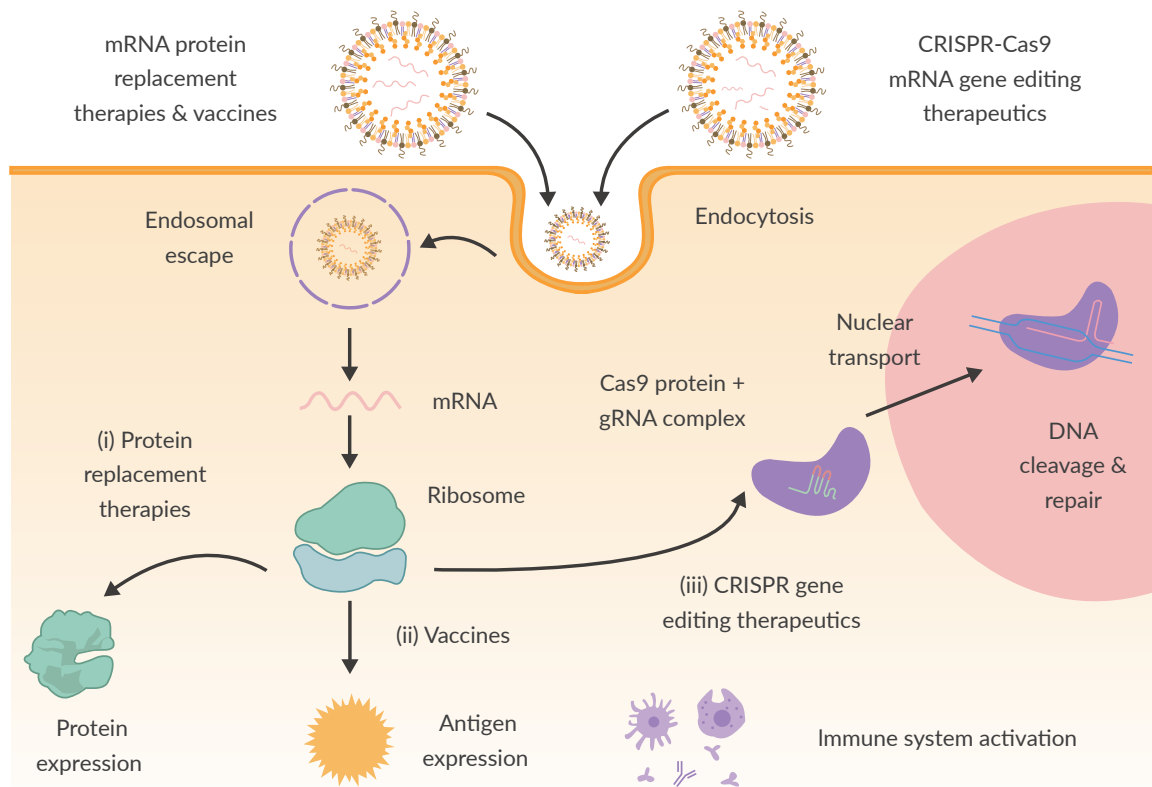


Lipid Nanoparticle

Lipid Nanoparticles (LNPs) are currently the mainstream delivery vehicle. Due to their advantage of being readily taken up by antigen-presenting cells, they are commonly used in vaccines. LNPs are primarily composed of four lipid components: ionizable cationic lipids, polyethylene glycol (PEG)-lipids, helper lipids, and cholesterol.

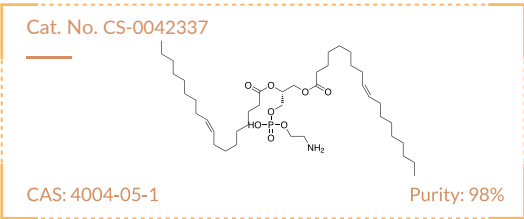
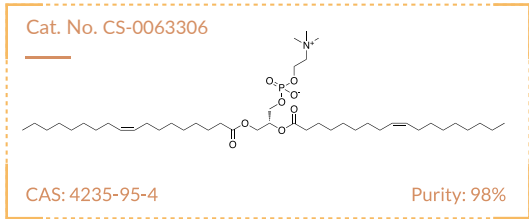
- The ionizable cationic lipids are neutral at physiological pH but become positively charged in an acidic environment. This allows them to bind with negatively charged nucleic acids, promote endosomal escape, and enhance the in vivo transfection efficiency of mRNA.
- Cholesterol improves particle stability by regulating membrane integrity and rigidity.
- PEG-lipids are located on the surface of the lipid nanoparticles and further enhance particle stability by reducing aggregation. PEG provides an external polymeric layer for LNPs, preventing serum protein adsorption and uptake by the mononuclear phagocyte system, thereby prolonging in vivo circulation time. Additionally, the amount of PEG-lipids influences the particle size.
- Helper lipids can spontaneously organize into lipid bilayers, and a higher phase transition temperature enhances the membrane stability of LNPs.



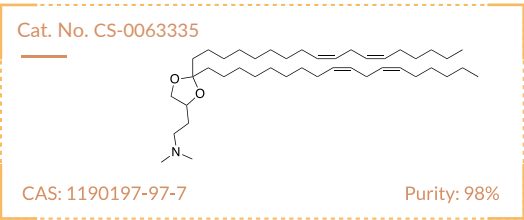
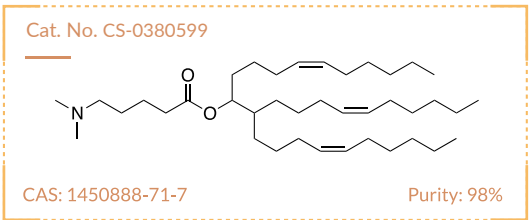
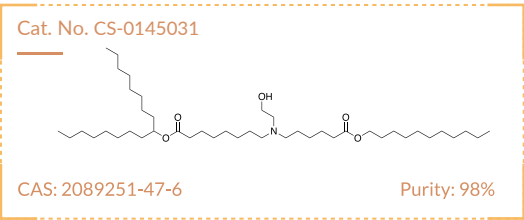
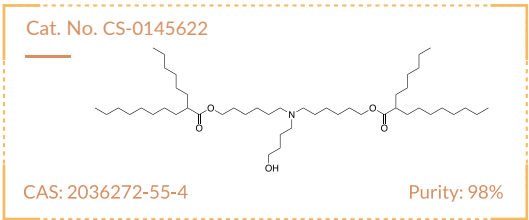
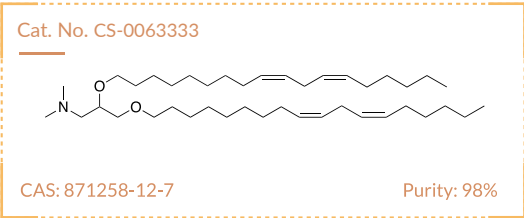
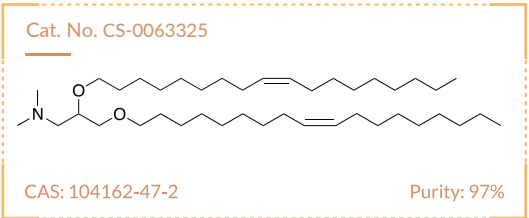
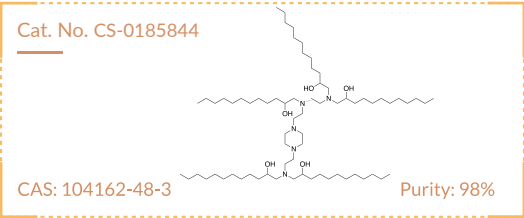
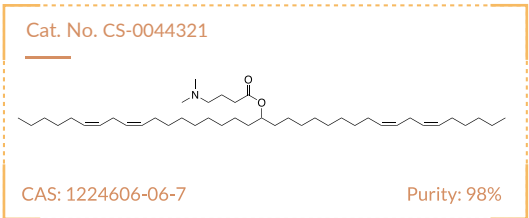
In vivo process of lipid nanoparticles (LNP) delivering mRNA

Hot products are displayed as follows:

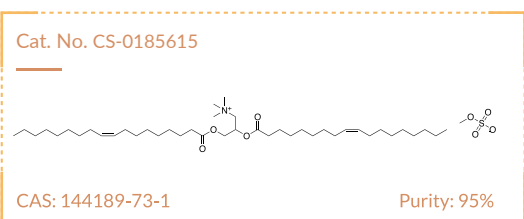
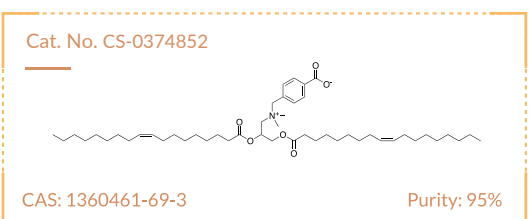
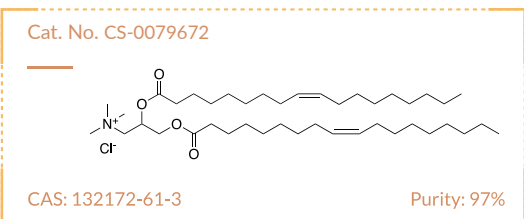
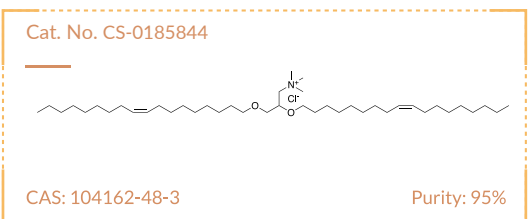
Helper Lipid:



Ionizable Lipid:

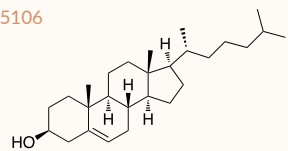


Cationic Lipid:



Cholesterol: -----

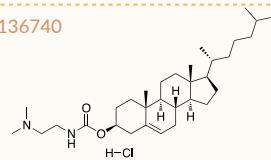
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CAS: 57-88-5

Purity: 98%

Cat. No. CS-0136740

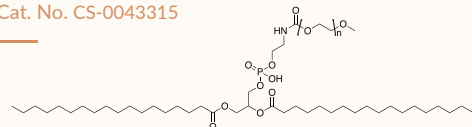


CAS: 166023-21-8

Purity: 98%

Phospholipid: -----

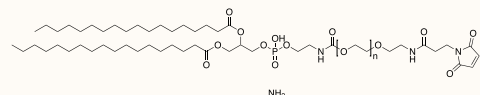
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CAS: 147867-65-0

Purity: 97%

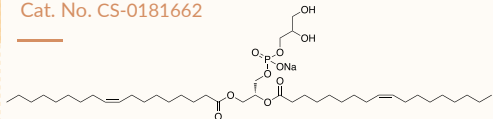
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CAS: 20559-16-4

Purity: 95%

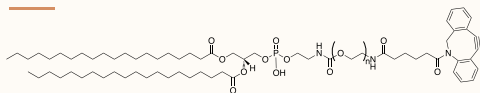
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CAS: 67254-28-8

Purity: 95%

Cat. No. CS-0435763

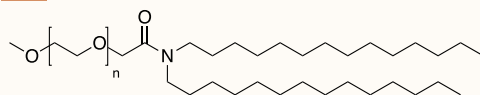


CAS: N/A

Purity: 95%

PEGylated Lipid / PEG-Lipid: -----

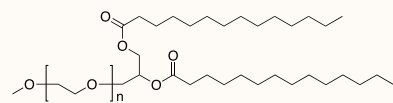
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CAS: 1849616-42-7

Purity: 95%

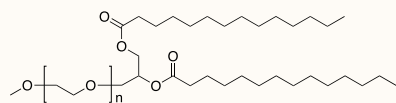
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CAS: 160743-62-4

Purity: 97%

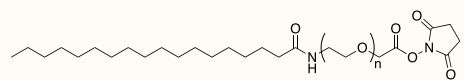
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CAS: 160743-62-4

Purity: 98%

Cat. No. CS-0435873



CAS: N/A

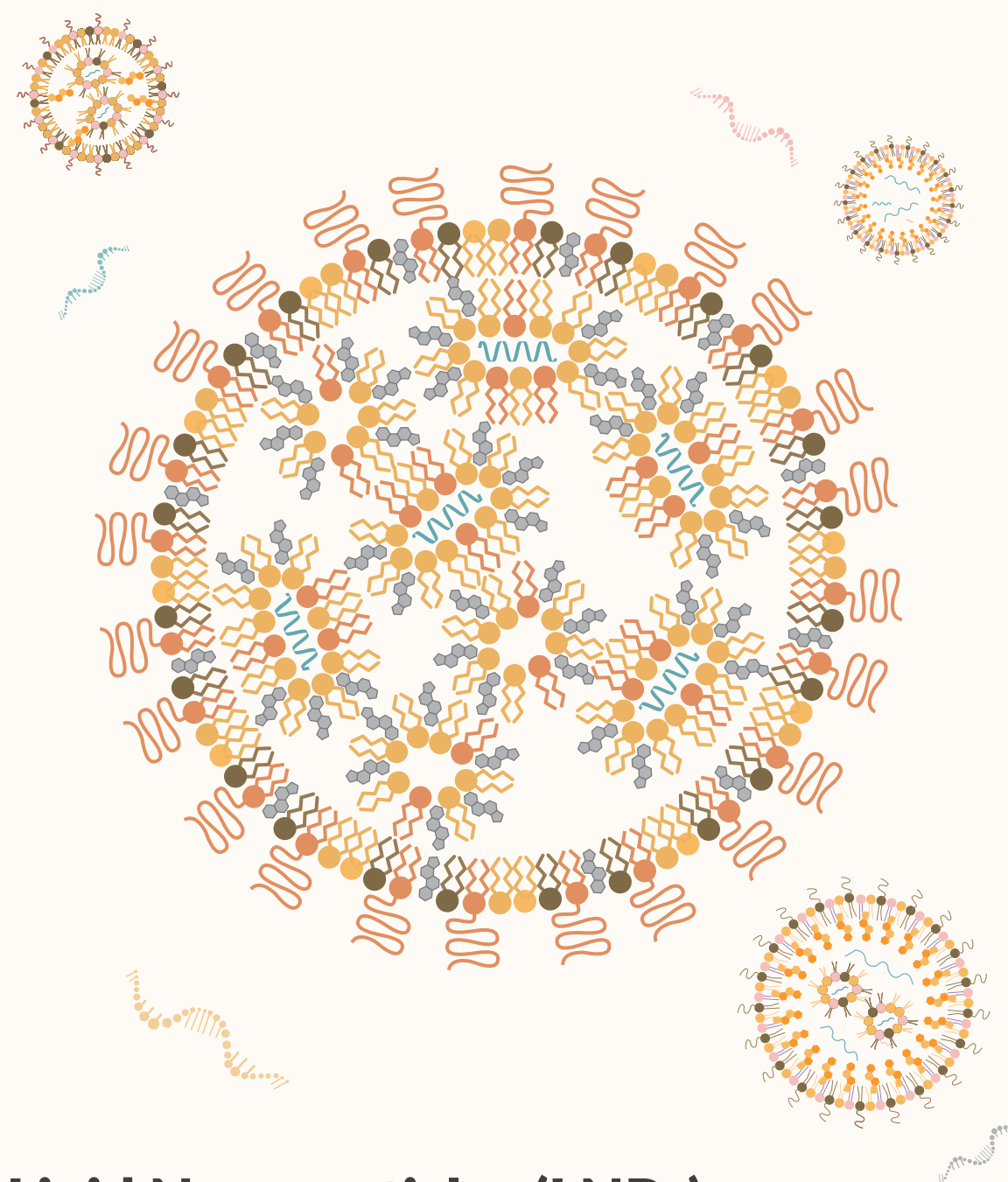
Purity: 95%

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Lipid Nanoparticles (LNPs)

Cationic Lipid | Cholesterol | Ionizable Lipid
Helper Lipid | Phospholipid | PEGylated Lipid / PEG-Lipid