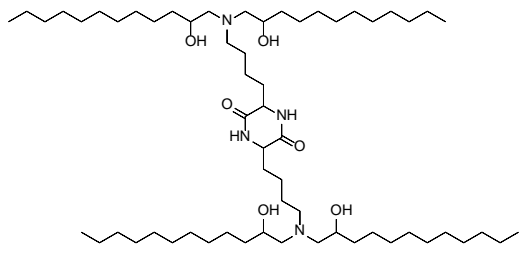


Product data sheet



MedKoo Cat#: 465718 Name: CKK-E12 CAS: 1432494-65-9 Chemical Formula: C ₆₀ H ₁₂₀ N ₄ O ₆ Exact Mass: 992.9208 Molecular Weight: 993.642	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

CKK-E12 is an ionizable lipid. It is useful for Development of Lipidoid Nanoparticles for siRNA, mRNA, and vaccine delivery.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	50.0	50.32

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.01 mL	5.03 mL	10.06 mL
5 mM	0.20 mL	1.01 mL	2.01 mL
10 mM	0.10 mL	0.50 mL	1.01 mL
50 mM	0.02 mL	0.10 mL	0.20 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Dong Y, Love KT, Dorkin JR, Sirirungruang S, Zhang Y, Chen D, Bogorad RL, Yin H, Chen Y, Vegas AJ, Alabi CA, Sahay G, Olejnik KT, Wang W, Schroeder A, Lytton-Jean AK, Siegwart DJ, Akinc A, Barnes C, Barros SA, Carioto M, Fitzgerald K, Hettinger J, Kumar V, Novobrantseva TI, Qin J, Querbes W, Koteliansky V, Langer R, Anderson DG. Lipopeptide nanoparticles for potent and selective siRNA delivery in rodents and nonhuman primates. *Proc Natl Acad Sci U S A*. 2014 Mar 18;111(11):3955-60. doi: 10.1073/pnas.1322937111. Epub 2014 Feb 10. Erratum in: *Proc Natl Acad Sci U S A*. 2014 Apr 15;111(15):5753. PMID: 24516150; PMCID: PMC3964096.

In vivo study

1. Dong Y, Love KT, Dorkin JR, Sirirungruang S, Zhang Y, Chen D, Bogorad RL, Yin H, Chen Y, Vegas AJ, Alabi CA, Sahay G, Olejnik KT, Wang W, Schroeder A, Lytton-Jean AK, Siegwart DJ, Akinc A, Barnes C, Barros SA, Carioto M, Fitzgerald K, Hettinger J, Kumar V, Novobrantseva TI, Qin J, Querbes W, Koteliansky V, Langer R, Anderson DG. Lipopeptide nanoparticles for potent and selective siRNA delivery in rodents and nonhuman primates. *Proc Natl Acad Sci U S A*. 2014 Mar 18;111(11):3955-60. doi: 10.1073/pnas.1322937111. Epub 2014 Feb 10. Erratum in: *Proc Natl Acad Sci U S A*. 2014 Apr 15;111(15):5753. PMID: 24516150; PMCID: PMC3964096.

7. Bioactivity

Biological target:

Product data sheet



CKK-E12 is a ionizable lipid in combination with other lipids make up the lipid nanoparticles which are used to deliver RNA-based therapeutics.

In vitro activity

To evaluate the silencing activity of cKK-E12 LPNs in different organs, this study formulated the nanoparticles with siRNA against Phosphatase and tensin homolog (Pten), a ubiquitously expressed protein in different cell types, and measured the expression level of Pten in different tissues after i.v. administration. cKK-E12 LPNs showed significant silencing in the liver over that seen in the lung, spleen, kidney, heart, and brain (Fig. 4A).

Reference: Proc Natl Acad Sci U S A. 2014 Mar 18;111(11):3955-60. <https://pubmed.ncbi.nlm.nih.gov/24516150/>

In vivo activity

cKK-E12 was highly selective toward liver parenchymal cell in vivo, with orders of magnitude lower doses needed to silence in hepatocytes compared with endothelial cells and immune cells in different organs. Toxicity studies showed that cKK-E12 was well tolerated in rats at a dose of 1 mg/kg (over 100-fold higher than the ED50).

Reference: Proc Natl Acad Sci U S A. 2014 Mar 18;111(11):3955-60. <https://pubmed.ncbi.nlm.nih.gov/24516150/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.