

DC49882 | CKK-E12

Instructions for Use

CKK-E12 is a ionizable lipid in combination with other lipids make up the lipid nanoparticles which are used to deliver RNA-based therapeutics. cKK-E12 was highly selective toward liver parenchymal cell in vivo. Multitail lipids usually have three or more tails and tend to form more cone-shaped structures due to the increase of tail crosssection, which enhances the endosome escape and mRNA delivery efficiency. CKK-E12 is an ionizable lipid with four lipid tails and diketopiperazine core-based head. It has shown excellent efficiency in delivering CRISPR-Cas9 mRNA and sgRNA. cKK-E12 iLNPs encapsulated mRNA was used to investigate the effect of Toll-like receptor 4 (TLR4) on iLNPs mediated mRNA delivery, and it has been demonstrated that the targeting, safety and efficacy of iLNPs are closely related to disease state. In other words, even though iLNP delivers therapeutic mRNA to a given cell type in one disease state, it is not guaranteed to deliver mRNA to the same cell type in another disease. As same as MC3 and C12-200, CKK-E12 is also used to be a positive control ionizable lipid when exploiting new ionizable lipids.

Product information

CAS No.	Not available
Chemical Name	CKK-E12
Formula	C60H120N4O6
M.Wt	993.62
Purity	ELSD-HPLC>95%
Storage	Original product: up to 1 year under the storage conditions stated on the vial, kept tightly sealed. Stock solutions: aliquots at -20°C, generally up to one month.
Shipping condition	Ships from Shanghai. Pure lipid is stable during ice-pack transport.

Formulation & study context

Literature values apply to the cited study only. Administration routes describe research, not clinical instructions.

A complete product-specific formulation has not been verified. No standard ratio is substituted.

N/P ratio	Not reported in the verified record
Cargo	Not available in the verified record
Administration route	Not available in the verified record

Animal model	Not available in the verified record
Formulation process	Not available in the verified record

N/P is a nitrogen-to-phosphate molar ratio. Lipid:cargo mass ratio is a different quantity and must not be used as N/P.

Stock-solution preparation table

Calculated using product-page MW: 993.62 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	10.064 mL	2.013 mL	1.006 mL
25 mg	25.161 mL	5.032 mL	2.516 mL
50 mg	50.321 mL	10.064 mL	5.032 mL
100 mg	100.642 mL	20.128 mL	10.064 mL
250 mg	251.605 mL	50.321 mL	25.161 mL

Volume (mL) = mass (mg) × 1000 / [MW (g/mol) × concentration (mM)]. Mathematical conversions only; not measured solubility. Confirm solvent compatibility and the exact material before preparation.

Handling & storage

Provided that storage conditions are as stated on the product vial and the vial is kept tightly sealed, the product can be stored for up to 1 year.

Wherever possible, prepare and use solutions on the same day. If stock solutions must be prepared in advance, store them as aliquots in tightly sealed vials at -20°C. Generally, these will be usable for up to one month.

Before use, and prior to opening the vial, allow the product to equilibrate to room temperature for at least 1 hour.

References

[1]. Dong Y, Love KT, Dorkin JR, et al. Lipopeptide nanoparticles for potent and selective siRNA delivery in rodents and nonhuman primates [published correction appears in Proc Natl Acad Sci U S A. 2014 Apr 15;111(15):5753]. Proc Natl Acad Sci U S A. 2014;111(11):3955-3960.