

DC13056 | E4i-200

Instructions for Use

E4i-200 is a branched ionizable lipid designed for efficient mRNA and CRISPR-Cas9 delivery. It features a 4-carbon (C4) lipid tail with an isopropyl (i) branch at the terminal position, enhancing its ability to disrupt endosomal membranes. The lipid is built around the 200 core, a polyamine structure (N1-(2-(4-(2-aminoethyl)piperazin-1-yl)ethyl)ethane-1,2-diamine), which facilitates mRNA encapsulation and delivery.

E4i-200 excels in liver-targeted delivery, significantly improving mRNA translation and gene editing efficiency in vivo. In experiments, it outperformed linear lipids, achieving 1.5-fold higher liver luminescence compared to the gold standard C12-200. Its isopropyl branch promotes deeper membrane penetration, enhancing endosomal escape and cargo release.

This lipid is particularly effective for hepatic gene editing, reducing target gene expression (e.g., TTR) by up to 90% in mouse models. Its modular design and low toxicity make it a promising candidate for mRNA-based therapies and CRISPR applications in the liver.

Product information

CAS No.	Not available
Chemical Name	E4i-200
Formula	C55H114O5N6
M.Wt	939.55
Purity	>98%
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: 939.55 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	10.643 mL	2.129 mL	1.064 mL
25 mg	26.608 mL	5.322 mL	2.661 mL
50 mg	53.217 mL	10.643 mL	5.322 mL
100 mg	106.434 mL	21.287 mL	10.643 mL
250 mg	266.085 mL	53.217 mL	26.608 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

Not available