

DC67652 | CICL-242

Instructions for Use

CICL-242 is a constrained ionizable cationic lipid highlighted in patent US 20250127728A1 developed by Capstan as a promising candidate for advanced therapeutic delivery, particularly in stem cell and gene editing applications. Its structure features a rigid amine headgroup similar to CICL-207, which likely facilitates efficient endosomal escape and reduces non-specific uptake, enhancing targeted nucleic acid delivery. Although detailed performance data is not fully disclosed in the patent, CICL-242 is explicitly synthesized and included in gene editing experimental systems (e.g., CRISPR-Cas9 workflows), suggesting its potential for high-efficiency transfection in hard-to-transfect cells like hematopoietic stem cells (CD34⁺). This makes it a strong candidate for ex vivo cell engineering and regenerative medicine, where precision and low off-target effects are critical. While further validation is needed to quantify its efficacy and safety profile, CICL-242 represents a strategic innovation in the lipid library for next-generation genetic therapies.

Product information

CAS No.	Not available
Chemical Name	CICL-242
Formula	C57H102O14N2
M.Wt	1,039.44
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: 1039.44 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	9.621 mL	1.924 mL	0.962 mL
25 mg	24.051 mL	4.810 mL	2.405 mL
50 mg	48.103 mL	9.621 mL	4.810 mL
100 mg	96.206 mL	19.241 mL	9.621 mL
250 mg	240.514 mL	48.103 mL	24.051 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