

DC67536 | Lipid A1-EP10-O18A

Instructions for Use

A1-EP10-O18A is an asymmetric ionizable lipid developed by Starna Therapeutics for mRNA vaccine delivery. Synthesized via Michael addition between amine alcohols and acrylates, its optimized structure—combining a hydrophilic C10 chain and hydrophobic unsaturated C18 tail—enables pH-dependent ionization. As the core component of the STAR0225 lipid nanoparticle (LNP) platform, it efficiently encapsulates mRNA and facilitates endosomal escape. Preclinical studies demonstrate superior in vivo mRNA delivery (vs. commercial SM102 LNPs), with enhanced local biodistribution and minimal off-target accumulation. This lipid underpins STR-V003, an RSV prefusion F mRNA vaccine showing robust immunogenicity and protection in animal models, supporting its clinical transition (NCT06344975).

Product information

CAS No.	Not available
Chemical Name	Lipid A1-EP10-O18A
Formula	C79H145O7N3
M.Wt	1,249.04
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: 1249.04 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	8.006 mL	1.601 mL	0.801 mL
25 mg	20.015 mL	4.003 mL	2.002 mL
50 mg	40.031 mL	8.006 mL	4.003 mL
100 mg	80.061 mL	16.012 mL	8.006 mL
250 mg	200.154 mL	40.031 mL	20.015 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