

DC67525 | Hopewell Lipid 649

Instructions for Use

L649 is a next-generation, lung-targeting ionizable lipid specifically designed for systemic mRNA delivery developed by Hopewell. Belonging to the novel "N-series" lipid class, it features a unique structure with an amine-containing head group and hydrophobic tails incorporating amide bonds. This design enables L649 to form highly stable lipid nanoparticles (LNPs) that exhibit exceptional tropism for the lower respiratory tract (lungs, bronchi, trachea) following intravenous administration. It demonstrates superior efficiency in delivering therapeutic payloads (like mRNA) specifically to key lung cell types, including alveolar epithelial cells (AT1 and AT2) and bronchial cells, while minimizing off-target accumulation in organs like the liver. L649-based LNPs, particularly when formulated with helper lipids like POPE, combine high potency with significantly improved tolerability, allowing for effective dosing in vivo. This makes L649 a promising candidate for developing treatments for various lung diseases such as pulmonary fibrosis, COPD, lung cancer, and infectious diseases like COVID-19.

Product information

CAS No.	Not available
Chemical Name	Hopewell Lipid 649
Formula	C75H151O4N7S4I343.32
M.Wt	1,343.32
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: 1343.32 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	7.444 mL	1.489 mL	0.744 mL
25 mg	18.611 mL	3.722 mL	1.861 mL
50 mg	37.221 mL	7.444 mL	3.722 mL
100 mg	74.442 mL	14.888 mL	7.444 mL
250 mg	186.106 mL	37.221 mL	18.611 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