

DC82305 | 80-O16B

Instructions for Use

80-O16B is a disulfide bond-containing ionizable cationic lipidoid. It has been used in the generation of lipid nanoparticles (LNPs) for the delivery of CRISPR complementary single-guide RNA (sgRNA) and Cas9 for genome editing in mice. LNPs containing 80-O16B conjugated to phenylboronic acid (PBA) and encapsulating an mRNA reporter increase luciferase reporter expression in HeLa cancer cells.² LNPs containing 80-O16B conjugated to PBA and encapsulating p53 mRNA decrease the viability of DU145 prostate and SiHa and HeLa cervical cancer cells.

Product information

CAS No.	Not available
Chemical Name	80-O16B
Formula	C39H78N2O4S4
M.Wt	767.3
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: 767.3 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	13.033 mL	2.607 mL	1.303 mL

Mass	1 mM	5 mM	10 mM
25 mg	32.582 mL	6.516 mL	3.258 mL
50 mg	65.164 mL	13.033 mL	6.516 mL
100 mg	130.327 mL	26.065 mL	13.033 mL
250 mg	325.818 mL	65.164 mL	32.582 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. Li, Y., Bolinger, J., Yu, Y., et al. Intracellular delivery and biodistribution study of CRISPR/Cas9 ribonucleoprotein loaded bio-reducible lipidoid nanoparticles. *Biomater. Sci.* 7(2), 596-606 (2019).
2. Tang, Q., Liu, J., Jiang, Y., et al. Cell-selective messenger RNA delivery and CRISPR/Cas9 genome editing by modulating the interface of phenylboronic acid-derived lipid nanoparticles and cellular surface sialic acid. *ACS Appl. Mater. Interfaces* 11(50), 46585-46590 (2019).