

Certificate of Analysis

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Product Name: SM 102

Catalog No.: 8909

Batch No.: 1

CAS Number: 2089251-47-6

IUPAC Name: 1-Octylnonyl 8-[(2-hydroxyethyl)[6-oxo-6-(undecyloxy)hexyl]amino]octanoate

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₄₄H₈₇NO₅

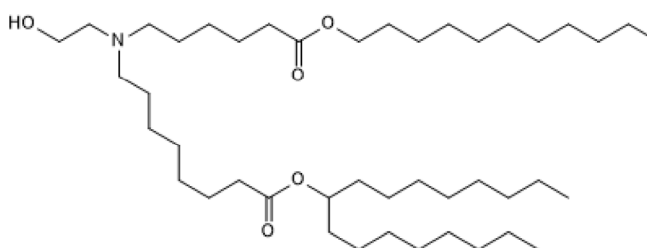
Batch Molecular Weight: 710.17

Physical Appearance: Pale yellow liquid

Solubility: Soluble in ethanol (supplied pre-dissolved in anhydrous ethanol, 100mg/mL)

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 97.8% purity

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

SM 102 is an ionizable cationic lipid (pKa = 6.68) used in the formulation of lipid nanoparticles (LNPs) for the delivery of mRNA in vitro and in vivo. Administration of LNPs containing SM 102 induces hepatic luciferase expression in mice. SM 102 is commonly formulated with cholesterol (Cat. No. 7945), DSPC (Cat. No. 7943), and DMG-PEG 2000 (Cat. No. 7944). For more information on LNPs and available components see our Lipid Nanoparticles page.

Physical and Chemical Properties:

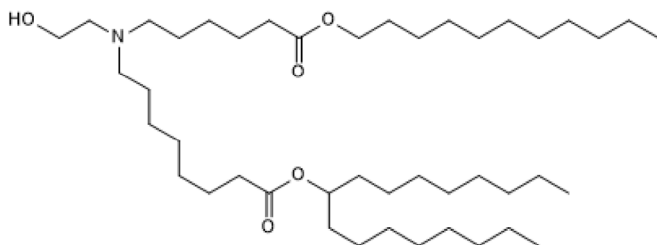
Batch Molecular Formula: C₄₄H₈₇NO₅

Batch Molecular Weight: 710.17

Physical Appearance: Pale yellow liquid

Minimum Purity: ≥95%

Batch Molecular Structure:



Storage: Store at -20°C. This product is packaged under an inert atmosphere.

Solubility & Usage Info:

Soluble in ethanol (supplied pre-dissolved in anhydrous ethanol, 100mg/mL)

This product is supplied dissolved in anhydrous ethanol at a concentration of 100mg/mL

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Hassett *et al* (2019) Optimization of lipid nanoparticles for intramuscular administration of mRNA vaccines. *Mol Ther Nucleic Acids* **15** 1. PMID: 30785039.

Sabnis *et al* (2018) A novel amino lipid series for mRNA delivery: improved endosomal escape and sustained pharmacology and safety in non-human primates. *Mol. Ther.* **26** 1509. PMID: 29653760.

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