

Certificate of Analysis

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Product Name: DLin-MC3-DMA

Catalog No.: 7946

Batch No.: 2

CAS Number: 1224606-06-7

IUPAC Name: (6Z,9Z,28Z,31Z)-Heptatriaconta-6,9,28,31-tetraen-19-yl 4-(dimethylamino)butanoate

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₄₃H₇₉NO₂

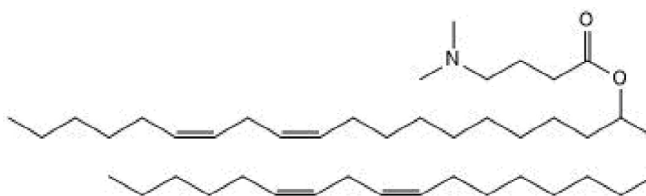
Batch Molecular Weight: 642.09

Physical Appearance: Clear 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 96.6% purity

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

bio-techne.com

info@bio-techne.com

techsupport@bio-techne.com

North America

Tel: (800) 343 7475

China

info.cn@bio-techne.com

Tel: +86 (21) 52380373

Europe Middle East Africa

Tel: +44 (0)1235 529449

Rest of World

www.tocris.com/distributors

Tel: +1 612 379 2956

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Description:

DLin-MC3-DMA is an ionizable cationic lipid ($pK_a = 6.44$), used in combination with other lipids in the formation of lipid nanoparticles (LNPs) for delivering cargos such as oligonucleotides into living cells. DLin-MC3-DMA can protect negatively charged cargos and facilitate their cytosolic transport. For a fully formulate LNP containing DLin-MC3-DMA and a luciferase mRNA reporter, see MC3 LNP Luciferase (Cat. No. 8889). For more information on how to prepare MC3 lipid nanoparticles for RNA delivery, please see our protocol. Please see product specific page on www.tocris.com for full description.

Physical and Chemical Properties:

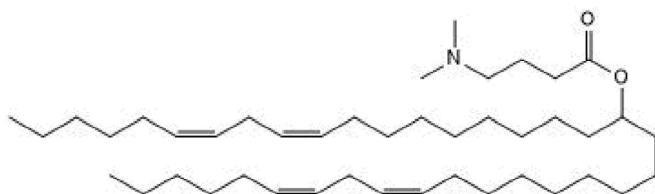
Batch Molecular Formula: $C_{43}H_{79}NO_2$

Batch Molecular Weight: 642.09

Physical Appearance: Clear liquid

Minimum Purity: ≥95%

Batch Molecular Structure:



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

CAUTION - This product is light sensitive and we recommend that the solid material and any solutions obtained are protected from exposure to light.

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:

Han *et al* (2021) An ionizable lipid toolbox for RNA delivery. *Nat. Commun* **12** 7233. PMID: 34903741.

Jayaraman *et al* (2012) Maximizing the potency of siRNA lipid nanoparticles for hepatic gene silencing *in vivo*. *Angew. Chem. Int. Ed. Engl* **51** 8529. PMID: 22782619.

Sample *et al* (2010) Rational design of cationic lipids for siRNA delivery. *Nat. Biotechnol* **28** 172. PMID: 20081866.

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