Certificate of Analysis

Product Name: **DSPE-PEG 2000 Azide** **Catalog No.: 8837** **Batch No.: 1**

CAS Number: 1938081-40-3

IUPAC Name: 1,2-Distearoyl-*sn*-glycero-3-phosphoethanolamine-*N*-[carbonyl-azido(polyethyleneglycol)-2000]

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $(C_2H_4O)_nC_{44}H_{84}N_4O_{10}P.NH_4$

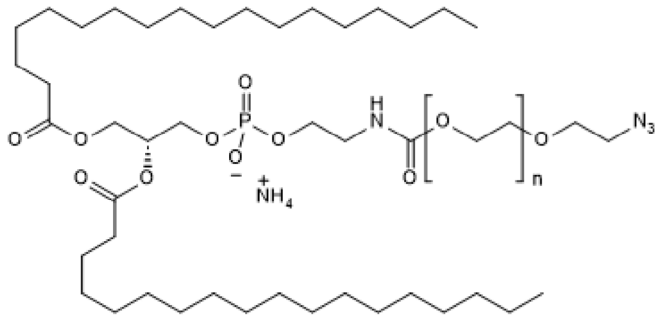
Batch Molecular Weight: 1

Physical Appearance: Off White solid

Solubility: ethanol to 10 mg/ml
chloroform to 10 mg/ml

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.8% purity

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Description:

DSPE-PEG 2000 Azide is a functionalized phospholipid-polymer conjugate. It comprises a 1,2-distearoyl-sn-glycero-PE (DSPE) covalently coupled to a linear polyethylene glycol (Mr 2000) with an azide-terminated end for onward chemistry. It is commonly used to synthesize antibody-coupled liposomes and lipid nanoparticles. It has been used to make macrophage and EGFR antibody targeted LNPs using strain-promoted azide alkyne cycloaddition (SPAAC) click reaction.

Physical and Chemical Properties:

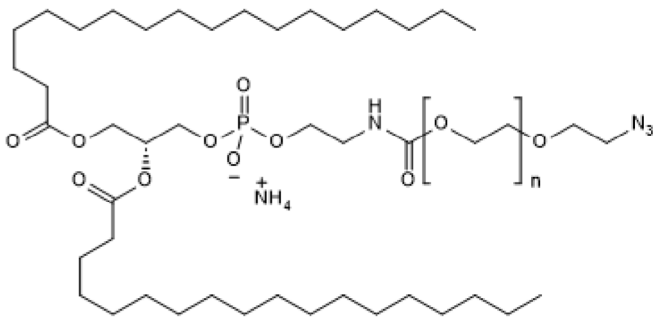
Batch Molecular Formula: $(C_2H_4O)_nC_{44}H_{84}N_4O_{10}P.NH_4$

Batch Molecular Weight: 1

Physical Appearance: Off White solid

Minimum Purity: ≥90%

Batch Molecular Structure:



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

Solubility & Usage Info:

ethanol to 10 mg/ml
chloroform to 10 mg/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:

Geisler *et al* (2024) EGFR-targeted ionizable lipid nanoparticles enhance *in vivo* mRNA delivery to the placenta. J.Control Release ***371*** 455. PMID: 38789090.

Zhao *et al* (2024) Precision treatment of viral pneumonia through macrophage-targeted lipid nanoparticle delivery. Proc.Natl.Acad.Sci.U.S.A. ***13*** e2314747121. PMID: 38315853.