

PRODUCT DATA SHEET

1,2-Dilauroyl-sn-glycero-3-phosphorylethanolamine

Catalog number: 1444

Synonyms: DLPE

Source: synthetic

Solubility: chloroform/methanol, 5:1

CAS number: 42436-56-6

Molecular Formula: C₂₉H₅₈NO₈P

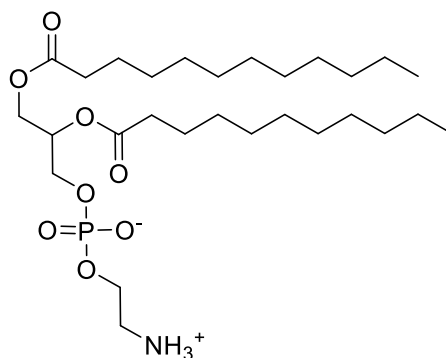
Molecular Weight: 580

Storage: -20°C

Purity: TLC: >98%

TLC System: chloroform/methanol/DI water
(65:25:4 by vol.)

Appearance: solid



Application Notes:

This phosphorylethanolamine is a well-defined phospholipid acylated with lauric acid at the *sn*-1 and *sn*-2 positions and is ideal for use as a PEGylated-DSPE complex for studies of liposomes.¹ Phosphatidylethanolamine (PE) is frequently the main lipid component of microbial membranes and the second most abundant phospholipid in mammals, comprising as much as 45% of brain lipids. They are concentrated in mitochondria and are key building blocks of membrane bilayers where they are distributed asymmetrically with the majority confined to the inner leaflet. It appears that a primary role for PE, in bacterial membranes at least, is simply to dilute the high negative charge density of the anionic phospholipids. PE acts as a chaperone in transport membrane folding.² In animals PE is involved in the secretion of very-low-density lipoproteins and aids in membrane fusion and fission.³ In plants *lyso* PE retards senescence by inhibiting phospholipase D. PE is the precursor to many important lipids. PE acts as a protein transport from the membrane to the vacuole. PE is synthesized through the CDP-ethanolamine or the PS decarboxylation pathway. PE can be converted to diacyl glycerol as a second messenger.⁴

Selected References:

1. A. Gabizon et al. "In Vivo Fate of Folate-Targeted Polyethylene-Glycol Liposomes in Tumor-Bearing Mice" *Clinical Cancer Research*, Vol. 9 pp. 6551-6559, 2003
2. M. Bogdanov, W. Dowhan, "Lipid-assisted Protein Folding" *Journal of Biological Chemistry*, Vol. 274 pp. 36827-36830, 1999
3. J. Vance, "Phosphatidylserine and phosphatidylethanolamine in mammalian cells: two metabolically related aminophospholipids" *Journal of Lipid Research*, Vol. 49 pp. 1377-1387, 2008
4. D. Lang et al., "Molecular Species Analysis of 1,2-Diglycerides on Phorbol Ester Stimulation of LA-N-1 Neuroblastoma Cells During Proliferation and Differentiation" *Journal of Neurochemistry*, Vol. 65 pp. 810, 1995

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