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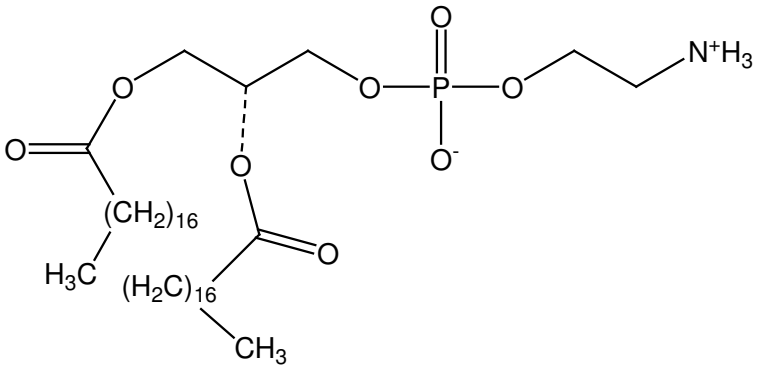
PRODUCT DATA SHEET

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

Catalog number: 1436
Synonyms: DSPE; 1,2-Distearoyl-phosphatidylethanolamine
Source: synthetic
Solubility: chloroform/acetic acid, 95:5; chloroform/methanol/water/acetic acid, 100:30:10:2.5
CAS number: 1069-79-0

Molecular Formula: $C_{41}H_{82}NO_8P$
Molecular Weight: 748
Storage: -20˚C
Purity: TLC: >98%
TLC System: chloroform/methanol/DI water/ ammonium hydroxide (65:25:3:3)
Appearance: solid



Application Notes:

This phosphorylethanolamine is a well-defined phospholipid acylated with C18:0 fatty acids at the *sn*-1 and *sn*-2 positions and is ideal for use as a PEGylated-DSPE complex for studies of lipisomes.[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*