

PRODUCT DATA SHEET

1,2-Distearoyl-*sn*-glycero-3-phosphatidic acid (Na⁺ salt), (DSPA)

Catalog No: 1430

Common Name: DSPA

Source: synthetic

Solubility: chloroform/methanol/acetic acid
(4:1:0.1)

CAS No: 108321-18-2

Molecular Formula: C₃₉H₇₆O₈P•Na

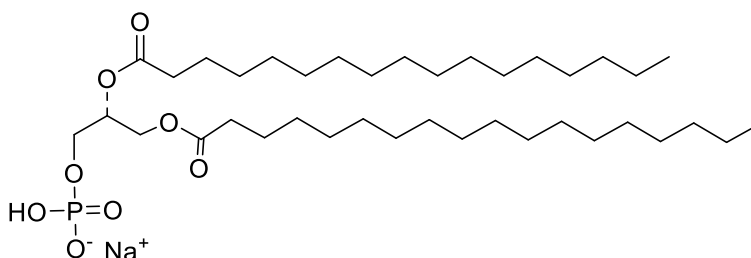
Molecular Weight: 727

Storage: -20°C

Purity: TLC > 98%

TLC System: chloroform/methanol/DI
water/ammonium hydroxide
(65:25:4:5 by vol.)

Appearance: solid



Application Notes:

This phosphatidic acid is a well-defined phospholipid acylated with C18:0 fatty acids at the *sn*-1 and *sn*-2 positions. A model of an anionic phospholipid layer using 1,2-distearoyl-*sn*-glycero-3-phosphatidic acid has been shown to be very compact and to prevent permeation by tetraethylammonium cations.¹ Phosphatidic acid (PA) is an important acidic lipid that is only found in relatively small amounts in comparison to other lipids. Phosphatidic acid acts as the precursor to a number of phospholipids and triacylglycerols, is integral in forming the shape of cellular membranes,² has roles in cellular signaling,³ and has a role in vesicle fission and fusion. PA is generally synthesized by the acylation of glycerophosphate but can also be synthesized by the phosphorylation of 1,2-diacyl-*sn*-glycerol or the hydrolysis of phosphatidylcholine. PA can be converted to diacylglycerols which are important cellular signaling agents.⁴

Selected References:

1. L. Monzon and L. Yudi "Cation adsorption at a distearoylphosphatidic acid layer adsorbed at a liquid/liquid interface" *Electrochimica Acta*, Vol. 52(24) pp.6873-6879, 2007
2. E. Kooijman et al. "Modulation of Membrane Curvature by Phosphatidic Acid and Lysophosphatidic Acid" *Traffic*, Vol. 4(3) pp. 162-174, 2003
3. K. Athenstaedt and G. Daum "Phosphatidic acid, a key intermediate in lipid metabolism" *European Journal of Biochemistry*, Vol. 266 pp. 1-16, 1999
4. M. Hodgkin et al. "Diacylglycerols and phosphatidates: which molecular species are intracellular messengers?" *Trends in Biochemical Sciences*, Vol. 23(6) pp. 200-204, 1998

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