

PRODUCT DATA SHEET

Phosphatidic acid (NH₄⁺ salt)

Catalog number: 1053

Common Name: PA (NH₄⁺ salt)

Source: semisynthetic, chicken, egg

Solubility: chloroform, ethyl ether

CAS number: N/A

Molecular Formula: C₃₉H₇₂O₈P • NH₄⁺

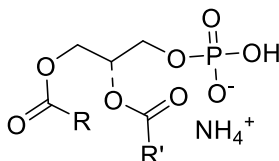
Molecular Weight: 718 (oleoyl)

Storage: -20°C

Purity: TLC >98%; identity confirmed by MS

TLC System: chloroform/methanol/DI
water/ammonium hydroxide
(60:25:3:2 by vol.)

Appearance: solid



Application Notes:

Phosphatidic acid is an important acidic lipid that is only found in relatively small amounts in comparison to other lipids. It acts as the precursor to several phospholipids and triacylglycerols, is integral in forming the shape of cellular membranes,¹ has functions in cellular signaling,² and has a role in vesicle fission and fusion. Phosphatidic acid 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. Phosphatidic acid can be converted to diacylglycerols which are important cellular signaling agents.³ The metabolism of phosphatidic acid has been shown to change due to external stimuli in the pathogen *Trypanosoma cruzi* and this could be used to develop a treatment for this disease.⁴

Selected References:

1. E. Kooijman et al. "Modulation of Membrane Curvature by Phosphatidic Acid and Lysophosphatidic Acid" *Traffic*, Vol. 4(3) pp. 162-174, 2003
2. K. Athenstaedt and G. Daum "Phosphatidic acid, a key intermediate in lipid metabolism" *European Journal of Biochemistry*, Vol. 266 pp. 1-16, 1999
3. M. Hodgkin et al. "Diacylglycerols and phosphatidates: which molecular species are intracellular messengers?" *Trends in Biochemical Sciences*, Vol. 23(6) pp. 200-204, 1998
4. A. Gimenez et al. "Regulation of Phosphatidic Acid Levels in *Trypanosoma cruzi*" *Lipids*, vol. 46 pp. 969-979, 2011

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