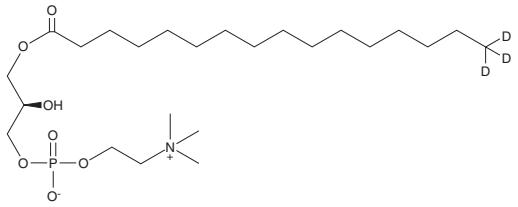
PRODUCT INFORMATION

1-Palmitoyl-d_3-2-hydroxy-*sn*-glycero-3-PC

Item No. 28229

CAS Registry No.: 2692624-19-2
Formal Name: (7R)-4,7-dihydroxy-N,N,N-trimethyl-10-oxo-3,5,9-trioxa-4-phosphapentacosan-25,25,25-d_3-1-aminium, inner salt, 4-oxide
Synonyms: 1-Hexadecanoyl-*sn*-glycero-3-Phosphatidylcholine-d_3, 1-Hexadecanoyl-*sn*-glycero-3-Phosphocholine-d_3, LPC-d_3, 16:0/0:0(d_3) Lyso-PC, 1-Palmitoyl-*sn*-glycero-3-Phosphocholine-d_3, PC(16:0/0:0)-d_3, 16:0/0:0-PC-d_3
MF: $C_{24}H_{47}D_3NO_7P$
FW: 498.7
Chemical Purity: ≥98% (1-Palmitoyl-2-hydroxy-*sn*-glycero-3-PC)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_3); ≤1% d_0
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

1-Palmitoyl-d_3-2-hydroxy-*sn*-glycero-3-PC is intended for use as an internal standard for the quantification of 1-palmitoyl-2-hydroxy-*sn*-glycero-3-PC (Item No. 10172) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

1-Palmitoyl-d_3-2-hydroxy-*sn*-glycero-3-PC is supplied as a solid. A stock solution may be made by dissolving the 1-palmitoyl-d_3-2-hydroxy-*sn*-glycero-3-PC in the solvent of choice, which should be purged with an inert gas. 1-Palmitoyl-d_3-2-hydroxy-*sn*-glycero-3-PC is soluble in the organic solvent ethanol at a concentration of approximately 2 mg/ml. 1-Palmitoyl-d_3-2-hydroxy-*sn*-glycero-3-PC is also soluble in DMSO and dimethyl formamide.

Description

1-Palmitoyl-2-hydroxy-*sn*-glycero-3-PC is the ubiquitous lipid species generated following phospholipase A_2 (PLA_2) hydrolysis of phosphatidylcholine.[1] It increases the production of reactive oxygen species (ROS) and decreases superoxide dismutase (SOD) and endothelial nitric oxide synthase (eNOS) protein levels, and phosphorylation of ERK1/2 in human umbilical vein endothelial cells (HUVECs) when used at a concentration of 125 µM.[2] 1-Palmitoyl-2-hydroxy-*sn*-glycero-3-PC potentiates the secretion of IL-6, IL-1β, IL-12, and TNF-α in LPS-stimulated M1 macrophages, but has no effect on CD163, CD206, CD36, or IL-10 in LPS-stimulated M2 macrophages when used at concentrations of 0.3 and 1.0 µM.[3] It increases TGF-β1 production and enhances Foxp3 protein levels in T_{reg} cells in isolated human peripheral blood when used at a concentration of 10 µM.[4] 1-Palmitoyl-2-hydroxy-*sn*-glycero-3-PC enhances neutrophil function, bacterial clearance, and survival in mouse models of sepsis when administered at a dose of 10 mg/kg.[5]

References

1. Balsinde, J., Winstead, M.V., and Dennis, E. *FEBS Lett.* **531(1)**, 2-6 (2002).
2. Choi, S., Park, S., Liang, G.H., *et al. Cell Physiol. Biochem.* **25(2-3)**, 233-240 (2010).
3. Qin, X., Qiu, C., and Zhao, L. *Cell. Immunol.* **289(1-2)**, 185-190 (2014).
4. Hasegawa, H., Lei, J., Matsumoto, T., *et al. Biochem. Biophys. Res. Commun.* **415(3)**, 526-531 (2011).
5. Yan, J.-J., Jung, J.-S., Lee, J.-E., *et al. Nat. Med.* **10(2)**, 161-167 (2004).

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