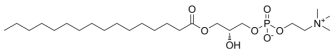
1-Palmitoyl-sn-glycero-3-phosphocholine

Cat. No.:	HY-125783
CAS No.:	17364-16-8
Molecular Formula:	$C_{24}H_{50}NO_7P$
Molecular Weight:	495.63
Target:	Endogenous Metabolite
Pathway:	Metabolic Enzyme/Protease
Storage:	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 50 mg/mL (100.88 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.0176 mL	10.0882 mL	20.1763 mL
	5 mM	0.4035 mL	2.0176 mL	4.0353 mL
	10 mM	0.2018 mL	1.0088 mL	2.0176 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 50 mg/mL (100.88 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

1-Palmitoyl-sn-glycero-3-phosphocholine is an abundant lysophosphatidylcholine. 1-Palmitoyl-sn-glycero-3-phosphocholine exhibits proinflammatory activity. 1-Palmitoyl-sn-glycero-3-phosphocholine can be used in the study of atherosclerosis[1][2][3][4].

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

1-Palmitoyl-sn-glycero-3-phosphocholine (125 μM, 2 h) induces superoxide overload on HUVECs by inhibiting SOD1. The levels of phosphoryl-ERK1/2 and eNOS were down-regulated[1].

1-Palmitoyl-sn-glycero-3-phosphocholine (0.3, 1 μM, 24 h) can enhance the secretion of IL-6, IL-1β, IL-12 and TNF-α in LPS (HY-D1056)-stimulated M1 macrophages[2].

1-Palmitoyl-sn-glycero-3-phosphocholine (10 μM, 24 h) increases TGF-β1 production and Foxp3 protein level in isolated human peripheral blood Treg cells[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]	
Cell Line:	HUVECs
Concentration:	50, 100, 125, 150 μM
Incubation Time:	2 h
Result:	Inhibited cell viability in a concentration-dependent manner.

Western Blot Analysis[1]	
Cell Line:	HUVECs
Concentration:	50, 100, 125, 150 μM
Incubation Time:	0.5, 1, 2 h
Result:	Time-dependently decreased protein levels of eNOS and SOD1.

In Vivo

1-Palmitoyl-sn-glycero-3-phosphocholine (10 mg/kg, subcutaneous injection) enhances neutrophil function, bacterial clearance, and survival in a mouse model of sepsis[4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Cecal ligation and puncture (CLP) mice[4]
Dosage:	10 mg/kg
Administration:	s.c.
Result:	Increased bactericidal activity of neutrophils, but not macrophages, by enhancing H(2)O(2) production in neutrophils that ingested E. coli.

REFERENCES

[1]. Choi S, et al. Superoxide generated by lysophosphatidylcholine induces endothelial nitric oxide synthase downregulation in human endothelial cells. Cell Physiol Biochem. 2010;25(2-3):233-40.

[2]. Qin X, et al. Lysophosphatidylcholine perpetuates macrophage polarization toward classically activated phenotype in inflammation. Cell Immunol. 2014 May-Jun;289(1-2):185-90.

[3]. Hasegawa H, et al. Lysophosphatidylcholine enhances the suppressive function of human naturally occurring regulatory T cells through TGF-β production. Biochem Biophys Res Commun. 2011 Nov 25;415(3):526-31.

[4]. Yan JJ, et al. Therapeutic effects of lysophosphatidylcholine in experimental sepsis. Nat Med. 2004 Feb;10(2):161-7.

Caution: Product has not been fully validated for medical applications. For research use only.

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