Lysophosphatidylcholines

Cat. No.: HY-139414

CAS No.: 9008-30-4

Target: Interleukin Related; p38 MAPK; ERK; Apoptosis

Pathway: Immunology/Inflammation; MAPK/ERK Pathway; Stem Cell/Wnt; Apoptosis

Storage:

Powder	-20°C	3 years
In solvent	-80°C	6 months
	-20°C	1 month

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SOLVENT & SOLUBILITY

In Vitro

Methanol : 25 mg/mL (Need ultrasonic)

DMSO : < 1 mg/mL (ultrasonic;warming;heat to 60°C) (insoluble or slightly soluble)

H_2O : < 0.1 mg/mL (ultrasonic) (insoluble)

BIOLOGICAL ACTIVITY

Description

Lysophosphatidylcholines is an orally active lysolipid and a component of oxidized low density lipoprotein (LDL). Lysophosphatidylcholines induces cell injury, the production of IL-1β and apoptosis. Lysophosphatidylcholines has a proactive effect on sepsis[1][2][3][4].

IC_{50} & Target	IL-1β	ERK1	ERK2

In Vitro

Lysophosphatidylcholine (3-100 μM, 24 h) reduced HUVEC viability[1].

Lysophosphatidylcholines (12.5μM, 4 h) upregulates gene expression of IL-1β in human peripheral blood monocytes[2].

Lysophosphatidylcholines (75μM, 24 h) induces apoptosis in HUVEC through a p38-mitogen-activated protein kinase-dependent mechanism[3].

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

Cell Cytotoxicity Assay[1]

Cell Line:	HUVEC
Concentration:	3 μM, 10μM, 30 μM, 100 μM
Incubation Time:	24 h
Result:	Reduced HUVEC viability in a concentration-dependent manner.

Western Blot Analysis[3]

Cell Line:	HUVEC
Concentration:	75 μM

Incubation Time:	24 h
Result:	Showed both ERK1/2 and p38-MAPK phosphorylation.

In Vivo

Lysophosphatidylcholines (0.1-20 mg/kg, Oral, single dose) protects against sepsis-induced lethality on albino ICR mice[4].
Lysophosphatidylcholines (0.1-20 mg/kg, Oral, single dose) enhances bacterial clearance, blocks cecal ligation and puncture (CLP)-induced neutrophil deactivation and increases bactericidal activity of neutrophils[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Albino ICR mice [4]
Dosage:	0.1 mg/kg, 1 mg/kg, 10 mg/kg, 20 mg/kg
Administration:	Oral
Result:	Provided significant protection against cecal ligation and puncture (CLP)-induced lethality at a dose of 1 mg/kg.

REFERENCES

[1]. Kim E A, et al. Lysophosphatidylcholine induces endothelial cell injury by nitric oxide production through oxidative stress [J]. The Journal of Maternal-Fetal & Neonatal Medicine, 2009, 22(4): 325-331.

[2]. Liu-Wu Y, et al. Lysophosphatidylcholine induces the production of IL-1β by human monocytes [J]. Atherosclerosis, 1998, 137(2): 351-357.

[3]. Takahashi M, et al. Lysophosphatidylcholine induces apoptosis in human endothelial cells through a p38-mitogen-activated protein kinase-dependent mechanism [J]. Atherosclerosis, 2002, 161(2): 387-394.

[4]. Yan J J, et al. Therapeutic effects of lysophosphatidylcholine in experimental sepsis [J]. Nature medicine, 2004, 10(2): 161-167.

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