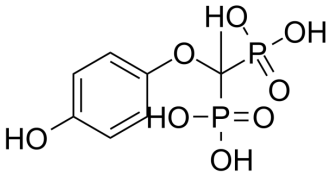
L-690330

Cat. No.:	HY-101075
CAS No.:	142523-38-4
Molecular Formula:	$C_8H_{12}O_8P_2$
Molecular Weight:	298.12
Target:	Phosphatase
Pathway:	Metabolic Enzyme/Protease
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 33.33 mg/mL (111.80 mM; Need ultrasonic)
DMSO : 25 mg/mL (83.86 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.3544 mL	16.7718 mL	33.5435 mL
5 mM	0.6709 mL	3.3544 mL	6.7087 mL
10 mM	0.3354 mL	1.6772 mL	3.3544 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (335.44 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (8.39 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (8.39 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.39 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

L-690330 is a competitive inhibitor of inositol monophosphatase (IMPase) with K_is of 0.27 and 0.19 μM for recombinant human and bovine IMPase, 0.30 and 0.42 μM for human and bovine frontal cortex IMPase, respectively. L-690330 exhibits 10-fold more sensitive than mouse and rat IMPase[1].

IC_{50} & Target

Ki: 0.27 μM (Recombinant human IMPase), 0.19 μM (Recombinant bovine IMPase), 0.30 μM (Human frontal cortex IMPase), 0.42 μM (Bovine frontal cortex IMPase)[1]

In Vitro

L-690330 (50 μM; 1 hour) induces P-AMPK and autophagy and increases LC3-I/II and p-AMPK expression in HEK293 cells[2].

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

Western Blot Analysis[2]

Cell Line:	HEK293 cells
Concentration:	50 μM
Incubation Time:	1 hour
Result:	Improved LC3-I/II and p-AMPK protein level.

In Vivo

L-690330 (intracerebroventricular injection; 0.1 μmol) has no effects on their motor activity and coordination in the beam walking, except a reduction in time spent in light in the dark/light test[3].

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

Animal Model:	Eight-week-old male ICR mice[3]
Dosage:	0.1 μmol
Administration:	Intracerebroventricular injection
Result:	Did not effect mice well-being by i.c.v injection.

REFERENCES

[1]. Atack JR, et al. In vitro and in vivo inhibition of inositol monophosphatase by the bisphosphonate L-690,330. J Neurochem. 1993 Feb;60(2):652-8.

[2]. Cárdenas C, et al. Essential regulation of cell bioenergetics by constitutive InsP3 receptor Ca2+ transfer to mitochondria.Cell. 2010 Jul 23;142(2):270-83.

[3]. Shtein L, et al. The inositol monophosphatase inhibitor L-690,330 affects pilocarpine-behavior and the forced swim test.Psychopharmacology (Berl). 2013 Jun;227(3):503-8.

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