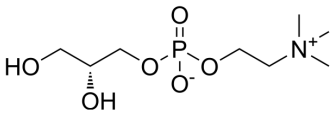
sn-Glycero-3-phosphocholine

Cat. No.:	HY-17552
CAS No.:	28319-77-9
Molecular Formula:	$C_8H_{20}NO_6P$
Molecular Weight:	257.22
Target:	Cholinesterase (ChE); Endogenous Metabolite
Pathway:	Neuronal Signaling; Metabolic Enzyme/Protease
Storage:	4°C, stored under nitrogen, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (388.77 mM; Need ultrasonic)

DMSO : 1.43 mg/mL (5.56 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.8877 mL	19.4386 mL	38.8772 mL
	5 mM	0.7775 mL	3.8877 mL	7.7754 mL
	10 mM	0.3888 mL	1.9439 mL	3.8877 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 150 mg/mL (583.16 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (8.09 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (8.09 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (8.09 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

sn-Glycero-3-phosphocholine (Choline Alfoscerate) is a precursor in the biosynthesis of brain phospholipids and increases the bioavailability of choline in nervous tissue. sn-Glycero-3-phosphocholine (Choline Alfoscerate) has significant effects on cognitive function with a good safety profile and tolerability, and is effective in the treatment of Alzheimer's disease and dementia[1][2].

IC_{50} & Target	Human Endogenous Metabolite
In Vivo	sn-Glycero-3-phosphocholine (Choline Alfoscerate) (250 mg/kg; i.m.; daily for 3 weeks) after seizure can improve seizure-induced cognitive impairment[2]. ?sn-Glycero-3-phosphocholine (Choline Alfoscerate) increases the release of acetylcholine in rat hippocampus, facilitates learning and memory in experimental animals, improves brain transduction mechanisms and decreases age-dependent structural changes occurring in rat brain areas involved in learning and memory[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Sprague-Dawley male rats[2]
Dosage:	250 mg/kg
Administration:	Intramuscular injection; starting at 3 weeks after seizure and continuing daily for 3 weeks
Result:	Improve seizure-induced cognitive impairment.

CUSTOMER VALIDATION

- J Phys Chem B. 2022 Apr 7;126(13):2466-2475.

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REFERENCES

[1]. Traini E, et al. Choline alphoscerate (alpha-glyceryl-phosphoryl-choline) an old choline- containing phospholipidwith a still interesting profile as cognition enhancing agent. Curr Alzheimer Res. 2013 Dec;10(10):1070-9.

[2]. Lee SH, et al. Late treatment with choline alfoscerate (l-alpha glycerylphosphorylcholine, α-GPC) increases hippocampal neurogenesis and provides protection against seizure-induced neuronal death and cognitive impairment. Brain Res. 2017 Jan 1;1654(Pt A):66-76.

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