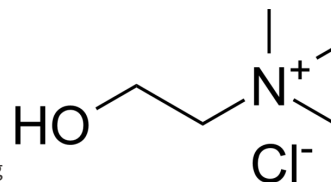


Choline chloride

Cat. No.:	HY-B1337
CAS No.:	67-48-1
Molecular Formula:	C ₅ H ₁₄ ClNO
Molecular Weight:	139.62
Target:	Endogenous Metabolite; nAChR
Pathway:	Metabolic Enzyme/Protease; Membrane Transporter/Ion Channel; Neuronal Signaling
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

DMSO : ≥ 140 mg/mL (1002.72 mM)
 H₂O : ≥ 100 mg/mL (716.23 mM)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
	1 mM		7.1623 mL	35.8115 mL	71.6230 mL
	5 mM		1.4325 mL	7.1623 mL	14.3246 mL
	10 mM		0.7162 mL	3.5811 mL	7.1623 mL

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

In Vivo

- Add each solvent one by one: PBS
Solubility: 130 mg/mL (931.10 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 3.5 mg/mL (25.07 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 3.5 mg/mL (25.07 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 3.5 mg/mL (25.07 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Choline chloride is an essential nutrient that activates alpha7 nicotinic receptors and has analgesic and anti-inflammatory activity. Glycerophosphoinositol choline can affect diseases such as liver disease, atherosclerosis and neurological disorders [1][2].

IC₅₀ & Target

Human Endogenous Metabolite

In Vitro

Choline chloride (0 or 70 μ M, 4 days) can effectively mitigate apoptosis and maintain cell viability^[1].

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

Cell Viability Assay^[1]

Cell Line:	Rat pheochromocytoma cells PC12
Concentration:	0 or 70 μ M
Incubation Time:	4 days
Result:	Showed the cell viability of 94% at 70 μ M while cell viability of 83% at 0 μ M. Reduced the number of cells with DNA breaks (characteristic of apoptosis) by 8.5% at 70 μ M compared to the no treatment group.

In Vivo

Choline chloride (s.c., 0.2 and 100 mg/kg/h, 24 or 48 hours) can reduce postoperative injurious reflexes and effectively decreases tumor necrosis factor (TNF) release from macrophages in female C57/Bl6 mice^[2].

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

Animal Model:	Postoperative pain model of female C57/Bl6 mice ^[2]
Dosage:	0.2 and 100 mg/kg/h
Administration:	Subcutaneous injection, 24 or 48 hours
Result:	Reduced heat hypersensitivity after surgery with maximal efficacy after 48 h treatment and the ED ₅₀ value of choline dose was 1.7 mg/kg/h. Reduced hypersensitivity to punctate mechanical stimuli 48 hours after infusion in a dose-dependent manner and with the ED ₅₀ value of 4.7 mg/kg/h but not 24 hours.

CUSTOMER VALIDATION

- Cell Death Dis. 2022 Oct 3;13(10):845.
- Antioxidants (Basel). 2024 Jan 17;13(1):115.

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REFERENCES

[1]. M Q Holmes-McNary, et al. Apoptosis is induced by choline deficiency in fetal brain and in PC12 cells. Brain Res Dev Brain Res. 1997 Jul 18;101(1-2):9-16.

[2]. T J Rowley, et al. Antinociceptive and anti-inflammatory effects of choline in a mouse model of postoperative pain. Br J Anaesth. 2010 Aug;105(2):201-7.

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

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