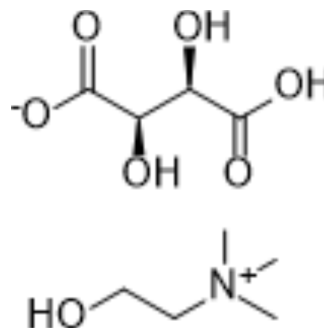


Choline bitartrate

Cat. No.:	HY-101036
CAS No.:	87-67-2
Molecular Formula:	C ₉ H ₁₉ NO ₇
Molecular Weight:	253.25
Target:	mAChR; Endogenous Metabolite
Pathway:	GPCR/G Protein; Neuronal Signaling; 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

H₂O : 120 mg/mL (473.84 mM; Need ultrasonic)
DMSO : 55 mg/mL (217.18 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.9487 mL	19.7433 mL	39.4867 mL
	5 mM	0.7897 mL	3.9487 mL	7.8973 mL
	10 mM	0.3949 mL	1.9743 mL	3.9487 mL

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

In Vivo

- Add each solvent one by one: PBS
Solubility: 100 mg/mL (394.87 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.75 mg/mL (10.86 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.75 mg/mL (10.86 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.75 mg/mL (10.86 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Choline bitartrate is a vitamin-like essential nutrient, can affect diseases such as liver disease, atherosclerosis and neurological disorders^{[1][2]}. Choline bitartrate is a precursor for the neurotransmitter acetylcholine, as a methyl donor in various metabolic processes, and in lipid metabolism^[3].

IC₅₀ & Target

Human Endogenous Metabolite

In Vitro	<p>Choline serves as a precursor component to two major cell membrane components: phosphatidylcholine and sphingomyelin in vitro^[3].</p> <p>Choline is also a major source for methyl groups via its metabolite, betaine, which participates in S-adenosylmethionine synthesis pathways^[4].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
In Vivo	<p>Choline bitartrate (oral gavage; 300 mg/kg vs. 5 g/kg) is administered. Choline restriction (300 mg/kg) provokes robust ketosis and weight loss in mice, also causes significant hepatic steatosis, inflammation, and cellular injury. when Choline is replenished, moderate ketosis and hepatic fat accumulation can be attenuated^[4].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

CUSTOMER VALIDATION

- Cell Death Dis. 2022 Oct 3;13(10):845.

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REFERENCES

- [1]. Hollenbeck CB, et al. An introduction to the nutrition and metabolism of choline. *Cent Nerv Syst Agents Med Chem*. 2012 Jun;12(2):100-13.
- [2]. Corbin KD, et al. Choline metabolism provides novel insights into nonalcoholic fatty liver disease and its progression. *Curr Opin Gastroenterol*. 2012 Mar;28(2):159-65.
- [3]. Shinobu Kuwae, et al. Development of a chemically defined platform fed-batch culture media for monoclonal antibody-producing CHO cell lines with optimized choline content. *Cytotechnology*. 2018 Jun;70(3):939-948.
- [4]. Rebecca C Schugar, et al. Role of choline deficiency in the Fatty liver phenotype of mice fed a low protein, very low carbohydrate ketogenic diet. *PLoS One*. 2013 Aug 29;8(8):e74806.
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Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA