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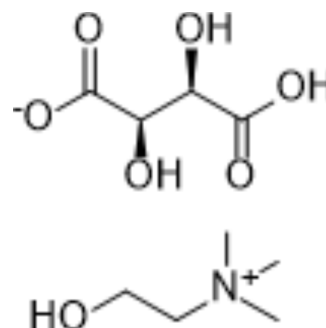
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Choline bitartrate

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	H ₂ O : 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	1. Add each solvent one by one: PBS Solubility: 100 mg/mL (394.87 mM); Clear solution; Need ultrasonic				
	2. 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				
	3. 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				
	4. 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] .
IC ₅₀ & Target	Human Endogenous Metabolite

In Vitro	Choline serves as a precursor component to two major cell membrane components: phosphatidylcholine and sphingomyelin in vitro^[3]. Choline is also a major source for methyl groups via its metabolite, betaine, which participates in S-adenosylmethionine synthesis pathways^[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	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]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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.

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

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