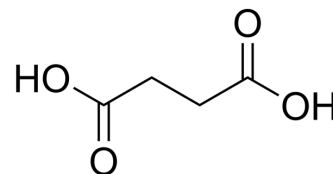


Succinic acid

Cat. No.:	HY-N0420		
CAS No.:	110-15-6		
Molecular Formula:	C ₄ H ₆ O ₄		
Molecular Weight:	118.09		
Target:	Endogenous Metabolite		
Pathway:	Metabolic Enzyme/Protease		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (846.81 mM; Need ultrasonic)
 H₂O : 30 mg/mL (254.04 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent		Mass		
	Concentration		1 mg	5 mg	10 mg
	1 mM		8.4681 mL	42.3406 mL	84.6812 mL
	5 mM		1.6936 mL	8.4681 mL	16.9362 mL
	10 mM		0.8468 mL	4.2341 mL	8.4681 mL

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

In Vivo

- Add each solvent one by one: PBS
Solubility: 32.5 mg/mL (275.21 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 (23.29 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.75 mg/mL (23.29 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.75 mg/mL (23.29 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Succinic acid is an anti-anxiety agent with oral activity. Disodium succinate is the salt form of Succinic acid. Succinic acid is an intermediate product of the tricarboxylic acid cycle. Succinic acid is an important platform chemical. Succinic acid can be used as surfactant, additive, ion chelating agent, flavoring agent and other applications in chemical, pharmaceutical and food fields^{[1][2][3][4][5]}.

IC ₅₀ & Target	Microbial Metabolite	Human Endogenous Metabolite
In Vivo	Succinic acid (3-6 mg/kg; p.o.; Single dose) has anti-anxiety effects in mice ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
	Animal Model:	Elevated plus-maze test mice model ^[3]
	Dosage:	3 mg/kg, 6 mg/kg
	Administration:	Oral gavage (p.o.); Single dose
	Result:	At doses of 3.0 and 6.0 mg/kg significantly increased the percentage of mice that entered the open arm and the percentage of time that the open arm stayed.
	Animal Model:	Food intake mice model ^[3]
	Dosage:	3 mg/kg, 6 mg/kg, 12 mg/kg
	Administration:	Intraperitoneal injection (i.p.); Single dose
	Result:	Significantly increased the mice's food intake within 5 minutes after administration.
	Animal Model:	Stress-induced hyperthermia test mice model ^[3]
	Dosage:	1.5 mg/kg, 3 mg/kg, 6 mg/kg
	Administration:	Oral gavage (p.o.); Single dose
Result:	Inhibited stress-induced hyperthermia at a dose of 1.5 mg/kg.	

CUSTOMER VALIDATION

- Cell Host Microbe. 2023 May 10;31(5):781-797.e9.
- J Proteomics. 2024 Mar 7:105155.
- Water Air Soil Pollut. 232, 473 (2021).
- Research Square Print. December 9th, 2022.

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REFERENCES

- [1]. AT JOHNS, et al. The production of propionic acid by decarboxylation of succinic acid in a bacterial fermentation. *Biochem J.* 1948;42(1):ii.
- [2]. Si Wei Chen, Anxiolytic-like effect of succinic acid in mice. *Life Sci.* 2003 Nov 7;73(25):3257-64.
- [3]. Xu J, et al. Microbial succinic acid, its polymer poly (butylene succinate), and applications[J]. *Plastics from bacteria: Natural functions and applications*, 2010: 347-388.
- [4]. Bechthold I, et al. Succinic acid: a new platform chemical for biobased polymers from renewable resources[J]. *Chemical Engineering & Technology: Industrial Chemistry-Plant Equipment-Process Engineering-Biotechnology*, 2008, 31(5): 647-654.
- [5]. Zhang YJ, et al. Optimization of succinic acid fermentation with *Actinobacillus succinogenes* by response surface methodology (RSM). *J Zhejiang Univ Sci B.* 2012

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

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