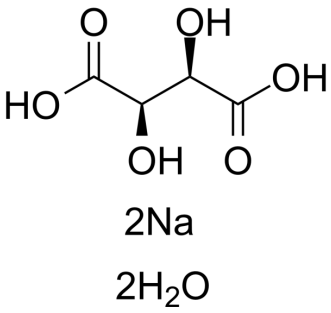
Tartaric acid disodium dihydrate

Cat. No.:	HY-D0850
CAS No.:	6106-24-7
Molecular Formula:	$C_4H_{10}Na_2O_8$
Molecular Weight:	232.1
Target:	Phosphatase; Endogenous Metabolite
Pathway:	Metabolic Enzyme/Protease
Storage:	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (430.85 mM; Need ultrasonic)
DMSO : < 1 mg/mL (insoluble or slightly soluble)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	4.3085 mL	21.5424 mL	43.0849 mL
	5 mM	0.8617 mL	4.3085 mL	8.6170 mL
	10 mM	0.4308 mL	2.1542 mL	4.3085 mL

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

In Vivo

1. Add each solvent one by one: PBS
Solubility: 20 mg/mL (86.17 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Tartaric acid disodium dehydrate (L-(+) -tartaric acid) is an orally active weak organic acid that can be isolated from grapes. Tartaric acid disodium dehydrate has vasodilatory and antihypertensive effects. Tartaric acid disodium dehydrate can be used as flavorings and antioxidants in a range of foods and beverages. Tartaric acid disodium dehydrate can be used in laser frequency doubling and optical limiting applications[1][2][3][4].

IC_{50} & Target	Microbial Metabolite	Human Endogenous Metabolite

In Vitro

L-Tartaric acid (1.66-6.64 mM) significantly reduces NEP and KCL-induced aortic ring vasoconstriction with EC_{50} values of 4.119 mM and 4.00 mM, respectively[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

L-Tartaric acid (80-240 mg/kg; P.O.; Single dose) reduces blood pressure in hypertensive mice induced by L-NAME (60 mg/kg)

[3].

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Animal Model:	Hypertensive Wistar rat model[3]
Dosage:	80 mg/kg, 240 mg/kg
Administration:	Oral gavage (p.o.); Single dose. After L-NAME treatment (60.mg/kg; p.o.)
Result:	Reduced systolic blood pressure (SABP) and mild blood pressure (mid-BP) in rats at a dose of 240mg/kg, but had no effect on mean artery pressure, diastolic blood pressure, pulse pressure level, and heart rate.

REFERENCES

[1]. Sasikala V, et al. Growth, molecular structure, NBO analysis and vibrational spectral analysis of l-tartaric acid single crystal. Spectrochim Acta A Mol Biomol Spectrosc. 2014 Apr 5;123:127-41.

[2]. DeBolt S, et al. L-tartaric acid synthesis from vitamin C in higher plants. Proc Natl Acad Sci U S A. 2006 Apr 4;103(14):5608-13.

[3]. Amssayef A, et al. L-Tartaric Acid Exhibits Antihypertensive and Vasorelaxant Effects: The Possible Role of eNOS/NO/cGMP Pathways. Cardiovasc Hematol Agents Med Chem. 2023;21(3):202-212.

[4]. EFSA Panel on Food Additives and Flavourings (FAF); Younes M, et al. Re-evaluation of l(+)-tartaric acid (E 334), sodium tartrates (E 335), potassium tartrates (E 336), potassium sodium tartrate (E 337) and calcium tartrate (E 354) as food additives. EFSA J. 2020 Mar 11;18(3):e06030.

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