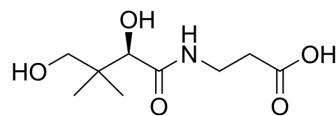


D-Pantothenic acid

Cat. No.:	HY-B0430		
CAS No.:	79-83-4		
Molecular Formula:	C ₉ H ₁₇ NO ₅		
Molecular Weight:	219.23		
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 : 50 mg/mL (228.07 mM; ultrasonic and warming and heat to 60°C)

Concentration	Solvent	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	4.5614 mL	22.8071 mL	45.6142 mL
	5 mM	0.9123 mL	4.5614 mL	9.1228 mL
	10 mM	0.4561 mL	2.2807 mL	4.5614 mL

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

In Vivo

- Add each solvent one by one: 0.5% CMC-Na/saline water
Solubility: 100 mg/mL (456.14 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (11.40 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (11.40 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (11.40 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

D-Pantothenic acid (Pantothenate) is an essential trace nutrient that functions as the obligate precursor of coenzyme A (CoA). D-Pantothenic acid plays key roles in myriad biological processes, including many that regulate carbohydrate, lipid, protein, and nucleic acid metabolism^[1].

IC₅₀ & Target

Human Endogenous Metabolite

In Vitro	<p>D-Pantothenic acid sodium is a precursor to coenzyme A and is primarily involved in energy production and lipid metabolism through the TCA cycle and the β-oxidation pathway, respectively^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>								
In Vivo	<p>Pantothenic acid (PTA; 3x10, 3x100, and 3x300 mg/kg) decreases Valproic acid (VPA; 300, 400, and 500 mg/kg, s.c.)-induced neural tube defects in mice^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1" data-bbox="345 380 1515 722"> <tr> <td data-bbox="345 380 617 443">Animal Model:</td> <td data-bbox="617 380 1515 443">Female ICR mice weighing 29-35 g^[2]</td> </tr> <tr> <td data-bbox="345 443 617 506">Dosage:</td> <td data-bbox="617 443 1515 506">3x10, 3x100, and 3x300 mg/kg (10 mL/kg, volume administered)</td> </tr> <tr> <td data-bbox="345 506 617 569">Administration:</td> <td data-bbox="617 506 1515 569">Injected intraperitoneally (i.p.) on day 8.5 of gestation</td> </tr> <tr> <td data-bbox="345 569 617 722">Result:</td> <td data-bbox="617 569 1515 722">Significantly reduced VPA (300, 400, and 500 mg/kg, s.c.)-induced exencephaly, while none of the other external malformations such as open eyelid or skeletal malformations such as fused, absent, or bifurcated ribs and fused thoracic vertebrae and fused sternbrae were reduced.</td> </tr> </table>	Animal Model:	Female ICR mice weighing 29-35 g ^[2]	Dosage:	3x10, 3x100, and 3x300 mg/kg (10 mL/kg, volume administered)	Administration:	Injected intraperitoneally (i.p.) on day 8.5 of gestation	Result:	Significantly reduced VPA (300, 400, and 500 mg/kg, s.c.)-induced exencephaly, while none of the other external malformations such as open eyelid or skeletal malformations such as fused, absent, or bifurcated ribs and fused thoracic vertebrae and fused sternbrae were reduced.
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CUSTOMER VALIDATION

- Environ Sci Pollut Res Int. 2018 Feb;25(4):3765-3774.
- Norwegian University of Science and Technology. Department of Clinical and Molecular Medicine. 2021 Oct.

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REFERENCES

- [1]. Shuai Chen, et al. Metabolomic analysis of the toxic effect of chronic exposure of cadmium on rat urine. Environ Sci Pollut Res Int. 2018 Feb;25(4):3765-3774.
- [2]. M Sato, et al. Pantothenic acid decreases valproic acid-induced neural tube defects in mice (I). Teratology. 1995 Sep;52(3):143-8.

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

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