

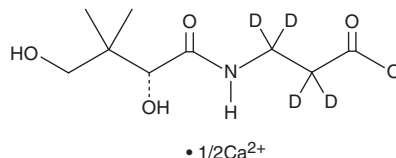
PRODUCT INFORMATION



D-Pantothenic Acid-d₄ (calcium salt)

Item No. 45632

Formal Name: (R)-3-(2,4-dihydroxy-3,3-dimethylbutanamido)propanoate-2,2,3,3-d₄, hemicalicum salt
Synonym: Vitamin B₅-d₄
MF: C₉H₁₂D₄NO₅ • 1/2Ca
FW: 484.6
Chemical Purity: ≥95% (D-Pantothenic Acid)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

D-Pantothenic acid-d₄ (calcium salt) is intended for use as an internal standard for the quantification of D-pantothenic acid (Item No. 17288) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

D-Pantothenic acid-d₄ (calcium salt) is supplied as a solid. A stock solution may be made by dissolving the D-pantothenic acid-d₄ (calcium salt) in the solvent of choice, which should be purged with an inert gas. D-Pantothenic acid-d₄ (calcium salt) is soluble (≥10 mg/ml) in DMSO and dimethyl formamide.

Description

D-Pantothenic acid is the biologically active enantiomer of vitamin B₅ and a biosynthetic precursor of coenzyme A (CoA).¹ A D-pantothenic acid-deficient diet reduces food intake, body weight gain, and liver, heart, spleen, testes, and gastrocnemius muscle weight in weaning rats. Fecal levels of D-pantothenic acid are increased in patients with colorectal cancer.² Levels of D-pantothenic acid are decreased in postmortem brain tissue from patients with Alzheimer's disease.³ Formulations containing D-pantothenic acid have been used as dietary supplements.

References

- Shibata, K., Kaneko, M., and Fukuwatari, T. D-pantethine has vitamin activity equivalent to D-pantothenic acids for recovering from a deficiency of D-pantothenic acid in rats. *J. Nutr. Sci. Vitaminol. (Tokyo)* **59**(2), 93-99 (2013).
- Weir, T.L., Manter, D.K., Sheflin, A.M., *et al.* Stool microbiome and metabolome differences between colorectal cancer patients and healthy adults. *PLoS One* **8**(8), 70803 (2013).
- Xu, J., Patassini, S., Begley, P., *et al.* Cerebral deficiency of vitamin B5 (d-pantothenic acid; pantothenate) as a potentially-reversible cause of neurodegeneration and dementia in sporadic Alzheimer's disease. *Biochem. Biophys. Res. Commun.* **527**(3), 676-681 (2020).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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