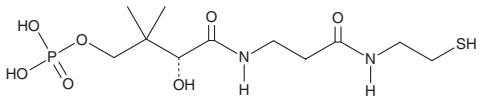
PRODUCT INFORMATION

4'-Phosphopantetheine

Item No. 44534

CAS Registry No.: 2226-71-3
Formal Name: (2R)-2-hydroxy-N-[3-[(2-mercaptoethyl) amino]-3-oxopropyl]-3,3-dimethyl-4-(phosphonooxy)-butanamide
Synonyms: 4'-PP, 4-PPanSH, PPant
MF: $C_{11}H_{23}N_2O_7PS$
FW: 358.3
Purity: ≥95%
Supplied as: A semi-solid
Storage: -20°C
Stability: ≥4 years
Special Conditions: Hygroscopic



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

Laboratory Procedures

4'-Phosphopantetheine is supplied as a solid. A stock solution may be made by dissolving the 4'-phosphopantetheine in the solvent of choice, which should be purged with an inert gas. 4'-Phosphopantetheine is slightly soluble (0.1-1 mg/ml) in methanol.

Description

4'-Phosphopantetheine is an intermediate in the coenzyme A (CoA; Item Nos. 16147 | 21722 | 21499) biosynthesis and salvage pathways.[1] It is also an integral cofactor in phosphopantetheinylation, a post-translational modification to serine residues in inactive apo-synthases, such as fatty acid synthases and polyketide synthases, that converts them into active holo-synthases.[2] 4'-Phosphopanthetheine increases pyruvate dehydrogenase (PDH) and mitochondrial complex I activity and transferrin receptor protein 1 (TfR1) levels in the globus pallidus in a *Pank2* knockout mouse model of pantothenate kinase-associated neurodegeneration (PKAN), an inborn error of CoA metabolism characterized by mutations in pantothenate kinase 2 (PanK2), the enzyme that converts pantetheine to 4'-phosphopantetheine.[3]

References

1. de Villiers, M., Barnard, L., Koekemoer, L., *et al.* Variation in pantothenate kinase type determines the pantothenamide mode of action and impacts on coenzyme A salvage biosynthesis. *FEBS J.* **281(20)**, 4731-4753 (2014).
2. Beld, J., Sonnenschein, E.C., Vickery, C.R., *et al.* The phosphopantetheinyl transferases: Catalysis of a post-translational modification crucial for life. *Nat. Prod. Rep.* **31(1)**, 61-108 (2014).
3. Jeong, S.Y., Hogarth, P., Placzek, A., *et al.* 4'-Phosphopantetheine corrects CoA, iron, and dopamine metabolic defects in mammalian models of PKAN. *EMBO Mol. Med.* **11(12)**, e10489 (2019).

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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