

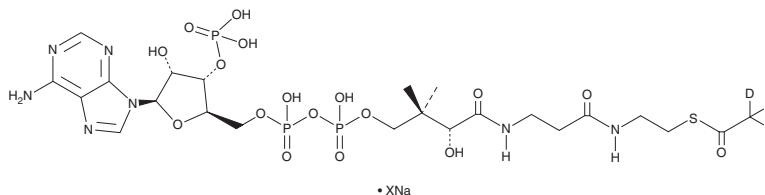
PRODUCT INFORMATION



Acetyl-Coenzyme A-d₃ (sodium salt)

Item No. 40458

Formal Name: S-(acetate-d₃) coenzyme A, sodium salt
Synonym: Acetyl-CoA-d₃
MF: C₂₃H₃₅D₃N₇O₁₇P₃S • XNa
FW: 812.6
Chemical Purity: ≥90% (Acetyl-coenzyme A)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤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

Acetyl-coenzyme A-d₃ (acetyl-CoA-d₃) (sodium salt) is intended for use as an internal standard for the quantification of acetyl-CoA (Item No. 16160) 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).

Acetyl-CoA-d₃ is supplied as a solid. A stock solution may be made by dissolving the acetyl-CoA-d₃ in the solvent of choice, which should be purged with an inert gas. Acetyl-CoA-d₃ is soluble in acetonitrile.

Description

Acetyl-CoA, the thioester of CoA (Item Nos. 16147 | 21499 | 21722) and acetic acid, is a pivotal molecule in biological systems. Foremost, it serves as a source of carbon for the Krebs cycle, for the synthesis of fatty acids, and for isoprenoid-based protein modifications.¹⁻⁴ Acetyl-CoA also serves as an intermediate in oxidation of fatty acids and amino acids and is formed by the oxidative decarboxylation of pyruvate in mitochondria.⁵ It is an essential cofactor or substrate for acetyltransferases and acyltransferases, as in the post-translational modification of proteins and in the synthesis of the neurotransmitter acetylcholine.^{2,3}

References

1. Akram, M. Citric acid cycle and role of its intermediates in metabolism. *Cell Biochem. Biophys.* **68**(3), 475-478 (2014).
2. Salminen, A., Kauppinen, A., Hiltunen, M., *et al.* Krebs cycle intermediates regulate DNA and histone methylation: Epigenetic impact on the aging process. *Ageing Res. Rev.* **16C**, 45-65 (2014).
3. Zaidi, N., Swinnen, J.V., and Smans, K. ATP-citrate lyase: A key player in cancer metabolism. *Cancer Res.* **72**(15), 3709-3714 (2012).
4. Palsson-McDermott, E.M. and O'Neill, L.A. The Warburg effect then and now: From cancer to inflammatory diseases. *BioEssays* **35**(11), 965-973 (2013).
5. Miura, Y. The biological significance of ω-oxidation of fatty acids. *Proc. Jpn. Acad. Ser. B Phys. Biol. Sci.* **89**(8), 370-382 (2013).

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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