

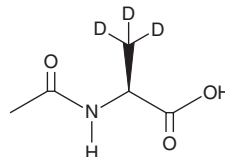
PRODUCT INFORMATION



N-Acetyl-L-alanine-d₃

Item No. 43924

CAS Registry No.: 1485548-36-4
Synonym: N-Acetylalanine-d₃
MF: C₅H₆D₃NO₃
FW: 134.1
Chemical Purity: ≥98% (N-Acetyl-L-alanine)
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

N-Acetyl-L-alanine-d₃ is intended for use as an internal standard for the quantification of N-acetyl-L-alanine (Item No. 37360) 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).

N-Acetyl-L-alanine-d₃ is supplied as a solid. A stock solution may be made by dissolving the N-acetyl-L-alanine-d₃ in the solvent of choice, which should be purged with an inert gas. N-Acetyl-L-alanine-d₃ is soluble (≥10 mg/ml) in DMSO. N-Acetyl-L-alanine-d₃ is sparingly soluble (1-10 mg/ml) in ethanol.

Description

N-Acetyl-L-alanine is an endogenous metabolite.¹⁻³ It decreases IFN-γ production induced by radiation-killed *M. tuberculosis* in natural killer (NK) cells isolated from patients with latent *M. tuberculosis* infection when used at a concentration of 3 μM.¹ N-Acetyl-L-alanine (3 μM) also decreases ATP production and glycolytic flux in naïve or radiation-killed *M. tuberculosis*-exposed isolated human NK cells. Brain levels of N-acetyl-L-alanine are decreased in a rat model of diabetic neuropathic pain induced by streptozotocin (STZ; Item No. 13104).² Increased urine levels of N-acetyl-L-alanine are associated with mutations in the gene encoding aminoacylase-1 (ACY1), an enzyme involved in the hydrolysis of N-acetylated proteins.³

References

1. Yang, B., Mukherjee, T., Radhakrishnan, R., *et al.* HIV-differentiated metabolite N-acetyl-L-alanine dysregulates human natural killer cell responses to *Mycobacterium tuberculosis* infection. *Int. J. Mol. Sci.* **24**(8), 7267 (2023).
2. Zhang, Q., Li, Q., Liu, S., *et al.* Decreased amino acids in the brain might contribute to the progression of diabetic neuropathic pain. *Diabetes Res. Clin. Pract.* **176**, 108790. (2021).
3. Sass, J.O., Mohr, V., Olbrich, H., *et al.* Mutations in ACY1, the gene encoding aminoacylase 1, cause a novel inborn error of metabolism. *Am. J. Hum. Genet.* **78**(3), 401-409 (2006).

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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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM