

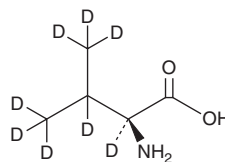
PRODUCT INFORMATION



L-Valine-d₈

Item No. 34830

CAS Registry No.: 35045-72-8
Formal Name: L-valine-2,3,4,4,4',4',4'-d₈
Synonyms: (+)-Valine, (S)-Valine
MF: C₅H₃D₈NO₂
FW: 125.2
Chemical Purity: ≥98% (L-Valine)
Deuterium
Incorporation: ≥99% deuterated forms (d₁-d₈); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

L-Valine-d₈ is intended for use as an internal standard for the quantification of L-valine 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).

Description

L-Valine is a branched-chain essential amino acid that is obtained *via* the diet.¹ It is considered glucogenic due to its catabolism that ultimately forms succinyl-CoA, which enters the citric acid cycle.² A deficiency in branched-chain dehydrogenase, the enzyme that catabolizes valine, isoleucine, and leucine, leads to maple syrup urine disease, a disorder characterized by progressive ketoacidosis, failure to thrive, neurological dysfunction, and, potentially, death.^{1,3}

References

1. Berg, J.M., Tymoczko, J.L., and Stryer, L. *Biochemistry*. 5th ed. W.H. Freeman, New York (2002).
2. Massey, K.A., Blakeslee, C.H., and Pitkow, H.S. A review of physiological and metabolic effects of essential amino acids. *Amino Acids* **14**(4), 271-300 (1998).
3. Farias, H.R., Gabriel, J.R., Cecconi, M.L., *et al.* The metabolic effect of α-ketoisocaproic acid: *In vivo* and *in vitro* studies. *Metab. Brain Dis.* **36**(1), 185-192 (2021).

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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