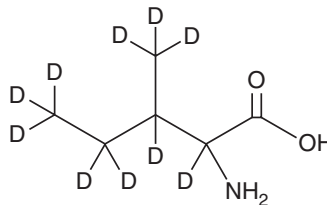


PRODUCT INFORMATION



Isoleucine-d₁₀ Item No. 34842

CAS Registry No.: 29909-02-2
Formal Name: isoleucine-2,3,3',3',3',4,4,5,5,5-d₁₀
MF: C₆H₃D₁₀NO₂
FW: 141.2
Chemical Purity: ≥98% (mixture of isomers) (Isoleucine)
Deuterium
Incorporation: ≥99% deuterated forms (d₁-d₁₀); ≤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

Isoleucine-d₁₀ is intended for use as an internal standard for the quantification of isoleucine (Item No. 41562) 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

Isoleucine is a mixture of the diastereomers L-isoleucine, L-alloisoleucine, D-isoleucine, and D-alloisoleucine. L-Isoleucine is an essential branched-chain amino acid that acts as a nitrogen donor and has roles in glucose consumption, fatty acid metabolism, and immune function.¹⁻³ L-Alloisoleucine is formed from L-isoleucine by transamination, and plasma levels of L-alloisoleucine are increased in patients with maple syrup urine disease (MSUD), an inborn error of metabolism characterized by branched-chain α-keto acid dehydrogenase (BCKAD) deficiency.^{4,5} D-Isoleucine and D-alloisoleucine are enantiomers of L-isoleucine and L-alloisoleucine, respectively.

Reference

1. Yamamoto, K., Tsuchisaka, A., and Yukawa, H. Branched-chain amino acids. *Amino acid fermentation*. Yokota, A. and Ikeda, M., editors, *Springer Japan* (2017).
2. Nie, C., He, T., Zhang, W., *et al.* Branched chain amino acids: Beyond nutrition metabolism. *Int. J. Mol. Sci.* **19**(4), 954 (2018).
3. Zhang, S., Zeng, X., Ren, M., *et al.* Novel metabolic and physiological functions of branched chain amino acids: A review. *J. Anim. Sci. Biotechnol.* **8**, 10 (2017).
4. Schadevaldt, P., Bodner-Leidecker, A., Hammen, H.W., *et al.* Formation of L-alloisoleucine *in vivo*: An L-[¹³C]isoleucine study in man. *Pediatr. Res.* **47**(2), 271-277 (2000).
5. Schadevaldt, P., Bodner-Leidecker, A., Hammen, H.W., *et al.* Significance of L-alloisoleucine in plasma for diagnosis of maple syrup urine disease. *Clin. Chem.* **45**(10), 1734-1740 (1999).

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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