

Product Data Sheet

Product Name: L-Leucine-d3

Cat. No.: GC64188

Chemical Properties

Cas. No. 87828-86-2

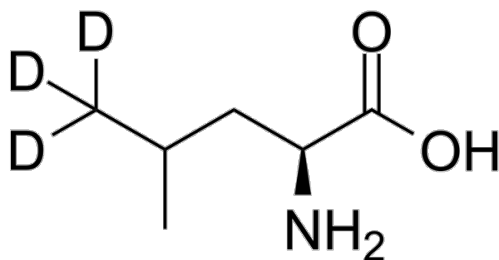
Formula $C_6H_{10}D_3NO_2$ M.Wt 134.19

Solubility H_2O : ≥ 10 mg/mL (74.52 mM) Storage Store at $-20^\circ C$

General tips For obtaining a higher solubility , please warm the tube at $37^\circ C$ and shake it in the ultrasonic bath for a while. Stock solution can be stored below $-20^\circ C$ for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Background

L-Leucine-d3 is a deuterated form of L-Leucine that is used for mass spectrometry (MS) quantification of proteins and as a tracer in metabolic studies^[1, 2]. L-Leucine is an essential branched-chain amino acid (BCAA) that activates the mammalian target of rapamycin (mTOR) signaling pathway^[3]. L-Leucine is an activator of glutamine:6-phosphofructotransferase (GFAT) and can inhibit NO synthesis in endothelial cells^[4]. L-Leucine can be used by skeletal muscle to provide energy during exercise^[5]. Both L-Leucine and D-Leucine can effectively inhibit epileptic seizures in mice^[6].

Caution: Product has not been fully validated for medical applications. For research use only.

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References:

- [1] Pannkuk E L, Laiakis E C, Girgis M, et al. Temporal effects on radiation responses in nonhuman primates: identification of biofluid small molecule signatures by gas chromatography–mass spectrometry metabolomics[J]. *Metabolites*, 2019, 9(5): 98.
- [2] Zhou J, Liang S, Fang L, et al. Quantitative proteomic analysis of HepG2 cells treated with quercetin suggests IQGAP1 involved in quercetin-induced regulation of cell proliferation and migration[J]. *OMICS A Journal of Integrative Biology*, 2009, 13(2): 93-103.
- [3] Duan Y, Li F, Liu H, et al. Nutritional and regulatory roles of leucine in muscle growth and fat reduction[J]. *Front Biosci (Landmark Ed)*, 2015, 20(4): 796-813.
- [4] Yang Y, Wu Z, Meininger C J, et al. L-Leucine and NO-mediated cardiovascular function[J]. *Amino Acids*, 2015, 47: 435-447.
- [5] Mero A. Leucine supplementation and intensive training[J]. *Sports Medicine*, 1999, 27: 347-358.
- [6] Hartman A L, Santos P, O'Riordan K J, et al. Potent anti-seizure effects of D-leucine[J]. *Neurobiology of Disease*, 2015, 82: 46-53.

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