
Product Data Sheet

Product Name: L-Leucine-13C

Cat. No.: GC68219

Chemical Properties

Cas. No. 74292-94-7

Formula $C_5^{13}CH_{13}NO_2$

M.Wt 132.17

Solubility H₂O : 5 mg/mL (37.83 mM; ultrasonic and warming and heat to 60°C)

Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°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-13C is the 13C-labeled L-Leucine. L-Leucine is an essential branched-chain amino acid (BCAA), which activates the **mTOR** signaling pathway^[1].

Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs^[1].

[1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother*. 2019;53(2):211-216.

[2]. Baoshan Xu, et al. Stimulation of mTORC1 with L-leucine rescues defects associated with Roberts syndrome. *PLoS Genet*. 2013;9(10):e1003857.

[3]. Bruckbauer A, et al. Synergistic effects of leucine and resveratrol on insulin sensitivity and fat metabolism in adipocytes and mice. *Nutr Metab (Lond)*. 2012 Aug 22;9(1):77.

[4]. Rachdi L, et al. L-leucine alters pancreatic β -cell differentiation and function via the mTor signaling pathway. *Diabetes*. 2012 Feb;61(2):409-17.

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

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