L-Leucine-d_2

Cat. No.: HY-N0486S12

CAS No.: 362049-59-0

Molecular Formula: $C_6H_{11}D_2NO_2$

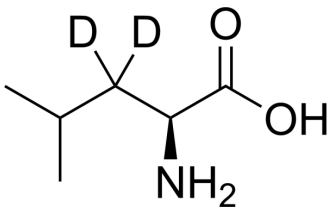
Molecular Weight: 133.19

Target: mTOR; Endogenous Metabolite

Pathway: PI3K/Akt/mTOR; Metabolic Enzyme/Protease

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

H_2O : 12.5 mg/mL (93.85 mM; Need ultrasonic)

PBS (pH 7.2) : ≥ 1 mg/mL (7.51 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	7.5081 mL	37.5404 mL	75.0807 mL
5 mM	1.5016 mL	7.5081 mL	15.0161 mL
10 mM	0.7508 mL	3.7540 mL	7.5081 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

L-Leucine-d_2 is the deuterium labeled L-Leucine. L-Leucine is an essential branched-chain amino acid (BCAA), which activates the mTOR signaling pathway[1].

In Vitro

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].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

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

[2]. 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.

[3]. 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.

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

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