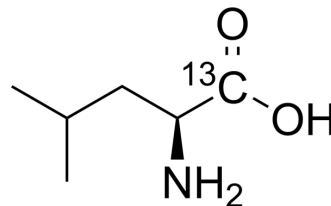


L-Leucine-¹³C

Cat. No.:	HY-N0486S1		
CAS No.:	74292-94-7		
Molecular Formula:	C ₅ ¹³ CH ₁₃ NO ₂		
Molecular Weight:	132.17		
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

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

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Preparing Stock Solutions	Solvent		1 mg	5 mg	10 mg
	Concentration	Mass			
	1 mM		7.5660 mL	37.8301 mL	75.6601 mL
	5 mM		1.5132 mL	7.5660 mL	15.1320 mL
	10 mM		0.7566 mL	3.7830 mL	7.5660 mL

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

BIOLOGICAL ACTIVITY

Description

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].

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

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[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.

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

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