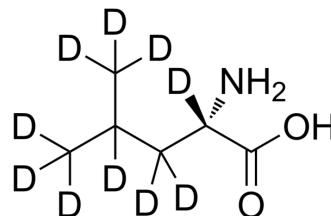


## L-Leucine-d<sub>10</sub>

|                           |  |
|---------------------------|--|
| <b>Cat. No.:</b>          | HY-N0486S  |
| <b>CAS No.:</b>           | 106972-44-5  |
| <b>Molecular Formula:</b> | C <sub>6</sub> H <sub>3</sub> D <sub>10</sub> NO <sub>2</sub>  |
| <b>Molecular Weight:</b>  | 141.23   |
| <b>Target:</b>            | mTOR; Endogenous Metabolite  |
| <b>Pathway:</b>           | PI3K/Akt/mTOR; Metabolic Enzyme/Protease   |
| <b>Storage:</b>           | 4°C, sealed storage, away from moisture and light<br>* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light) |



### SOLVENT & SOLUBILITY

#### In Vitro

H<sub>2</sub>O : 16.67 mg/mL (118.03 mM; Need ultrasonic)  
 PBS (pH 7.2) : ≥ 1 mg/mL (7.08 mM)  
 \* "≥" means soluble, but saturation unknown.

|                              | Solvent<br>Concentration | Mass      |            |            |
|------------------------------|--------------------------|-----------|------------|------------|
|                              |                          | 1 mg      | 5 mg       | 10 mg      |
| Preparing<br>Stock Solutions | 1 mM                     | 7.0806 mL | 35.4032 mL | 70.8065 mL |
|                              | 5 mM                     | 1.4161 mL | 7.0806 mL  | 14.1613 mL |
|                              | 10 mM                    | 0.7081 mL | 3.5403 mL  | 7.0806 mL  |

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

### BIOLOGICAL ACTIVITY

#### Description

L-Leucine-d<sub>10</sub> 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<sup>[1]</sup>.  
 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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22;9(1):77.

[3]. Rachdi L, et al. L-leucine alters pancreatic  $\beta$ -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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**Caution: Product has not been fully validated for medical applications. For research use only.**

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