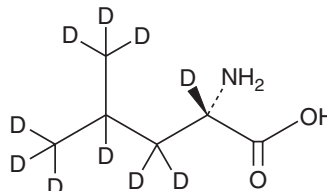


# PRODUCT INFORMATION



## L-Leucine-d<sub>10</sub> Item No. 34843

**CAS Registry No.:** 106972-44-5  
**Formal Name:** L-leucine-2,3,3,4,5,5,5',5',5'-d<sub>10</sub>  
**Synonym:** Leu-d<sub>10</sub>  
**MF:** C<sub>6</sub>H<sub>3</sub>D<sub>10</sub>NO<sub>2</sub>  
**FW:** 141.2  
**Chemical Purity:** ≥98% (L-Leucine)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>10</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

L-Leucine-d<sub>10</sub> is intended for use as an internal standard for the quantification of L-leucine (Item No. 34342) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

### Description

L-Leucine is an essential amino acid.<sup>1</sup> It increases basal insulin secretion and decreases glucose-induced insulin release in INS-1E rat insulinoma cells when used at concentrations of 1, 5, and 10 mM.<sup>2</sup> L-Leucine (1, 5, and 10 mM) decreases triglyceride levels and increases cholesterol accumulation in INS-1E cells. It stimulates skeletal muscle protein synthesis in exercised rats, as well as in food-deprived rats in an mTOR-dependent manner.<sup>3,4</sup> Formulations containing L-leucine have been used as dietary supplements.

### References

1. Duan, Y., Li, F., Li, Y., *et al.* The role of leucine and its metabolites in protein and energy metabolism. *Amino Acids* **48(1)**, 41-51 (2016).
2. Liu, Z., Jeppesen, P.B., Gregersen, S., *et al.* Chronic exposure to leucine *in vitro* induces β-cell dysfunction in INS-1E cells and mouse islets. *J. Endocrinol.* **215(1)**, 79-88 (2012).
3. Anthony, J.C., Yoshizawa, F., Anthony, T.G., *et al.* Leucine stimulates translation initiation in skeletal muscle of postabsorptive rats via a rapamycin-sensitive pathway. *J. Nutr.* **130(10)**, 2413-2419 (2000).
4. Anthony, J.C., Anthony, T.G., and Layman, D.K. Leucine supplementation enhances skeletal muscle recovery in rats following exercise. *J. Nutr.* **129(6)**, 1102-1106 (1999).

**WARNING**  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

**WARRANTY AND LIMITATION OF REMEDY**  
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