

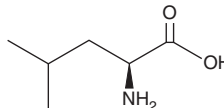
# PRODUCT INFORMATION



## L-Leucine

Item No. 34342

CAS Registry No.: 61-90-5  
Synonyms: Leu, NSC 46709  
MF:  $C_6H_{13}NO_2$   
FW: 131.2  
Purity:  $\geq 95\%$   
Supplied as: A solid  
Storage:  $-20^\circ C$   
Stability:  $\geq 4$  years



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

### Laboratory Procedures

L-Leucine is supplied as a solid. Aqueous solutions of L-leucine can be prepared by directly dissolving the solid in aqueous buffers. The solubility of L-leucine in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### 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  $\beta$ -cell dysfunction in INS-1E cells and mouse islets. *J. Endocrinol.* **215(1)**, 79-88 (2012).
3. J.C., A., 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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