

## Product Data Sheet

Product Name: H-Leu-OH

Cat. No.: GA10282

### Chemical Properties

Cas. No. 61-90-5

Chemical Name (2S)-2-amino-4-methylpentanoic acid

SMILES CC(C)CC(C(=O)O)N

Formula  $C_6H_{13}NO_2$

M.Wt 131.2

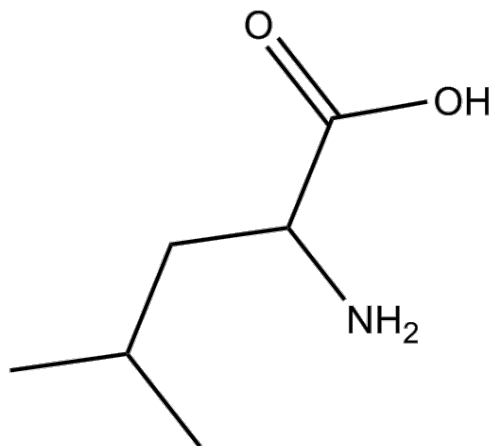
Solubility Water : 5mg/mL

Storage Store at RT

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



### Background

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

L-Leucine (10 mM) treatment impairs endocrine progenitor cell development[1]. In E13.5 rat pancreatic explants, in absence of added L-Leucine, Ngn3 mRNA levels increased after 1 day of

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

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culture, peaked on day 3, and then decreased. When L-Leucine is added, a dramatic decrease is observed in Ngn3 mRNA levels. This decrease in Ngn3 mRNA levels was paralleled by a decrease in the number of Ngn3-expressing cells ( $4728 \pm 408$  vs.  $959 \pm 28$ ; PNgn3, its target Insm1, and insulin[1]. Leucine stimulates protein synthesis in skeletal muscle of neonatal pigs by enhancing mTORC1 activation. L-Leucine increases intracellular HIF-1 $\alpha$  levels and activates the HIF-1 $\alpha$  signaling pathway, and these two effects are mediated by the mTOR signaling pathway. This process results in Ngn3 repression and, consequently, decreases  $\beta$ -cell differentiation[1].

### References:

[1]. 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.

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