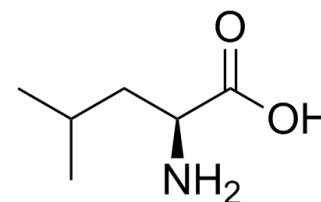


L-Leucine

Cat. No.:	HY-N0486		
CAS No.:	61-90-5		
Molecular Formula:	C ₆ H ₁₃ NO ₂		
Molecular Weight:	131.17		
Target:	mTOR		
Pathway:	PI3K/Akt/mTOR		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



BIOLOGICAL ACTIVITY

Description	L-Leucine is an essential branched-chain amino acid (BCAA), which activates the mTOR signaling pathway ^[1] .
IC₅₀ & Target	mTORC1
In Vitro	<p>L-Leucine (10 mM) treatment impairs endocrine progenitor cell development^[1].</p> <p>In E13.5 rat pancreatic explants, in absence of added L-Leucine, Ngn3 mRNA levels increased after 1 day of 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±408 vs. 959±28; P<0.01). Finally, L-Leucine also caused a dose-dependent repressive effect on the mRNA levels of the three genes, namely Ngn3, its target <i>Insm1</i>, and <i>insulin</i>^[1].</p> <p>Leucine stimulates protein synthesis in skeletal muscle of neonatal pigs by enhancing mTORC1 activation. L-Leucine increases intracellular HIF-1α levels and activates the HIF-1α signaling pathway, and these two effects are mediated by the mTOR signaling pathway. This process results in Ngn3 repression and, consequently, decreases β-cell differentiation^[1].</p>

REFERENCES

[1]. 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.

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

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