L-Isoleucine

Cat. No.: HY-N0771

CAS No.: 73-32-5

Molecular Formula: $C_6H_{13}NO_2$

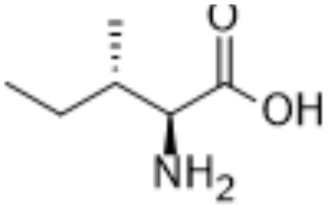
Molecular Weight: 131.17

Target: Endogenous Metabolite

Pathway: Metabolic Enzyme/Protease

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

H_2O : 25 mg/mL (190.59 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	7.6237 mL	38.1185 mL	76.2369 mL
	5 mM	1.5247 mL	7.6237 mL	15.2474 mL
	10 mM	0.7624 mL	3.8118 mL	7.6237 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 10 mg/mL (76.24 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

L-Isoleucine is an orally active branched chain amino acid, which is the L-enantiomer of isoleucine. L-Isoleucine has a role as a Saccharomyces cerevisiae metabolite, an Escherichia coli metabolite, a plant metabolite, a human metabolite, an algal metabolite and a mouse metabolite. L-Isoleucine regulates the inflammatory response to protect against pathogens in vivo and in vitro[1].

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

L-Isoleucine (0-16 mM, 12 h and 24 h) effectively relieves the decrease of TNF-α on cell viability in Intestinal epithelioid cells (IEC)[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	Intestinal epithelioid cell lines
Concentration:	0-16 mM
Incubation Time:	12 h, 24 h
Result:	Relieved the reduction of IEC-18 cell viability induced by TNF-a exposure in intestinal epithelioid cell lines.

In Vivo

L-Isoleucine [1.00% (w/w), p.o., 35 days] alleviates the growth performance impairment induced by dextran sulfate sodium (DSS), relieves the effect of DSS-induced colonic length shortage and the levels of IL-1β, IL-4, and IL-17 change in the colon of rats[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Wistar rats with L-isoleucine-supplemented diet and L-alanine-supplemented diet [1]
Dosage:	1.00% (w/w)
Administration:	p.o., 35 d (measure per 3 days)
Result:	Alleviated DSS-induced growth performance impairment and delayed the DSS-induced DAI in rats.

CUSTOMER VALIDATION

- Research Square Preprint. 2021 Jul.
- Laurea Magistrale in Biomedical Engineering, Politecnico di Milano. 2019 Jun.

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REFERENCES

[1]. Mao X, et al. l-Isoleucine Administration Alleviates DSS-Induced Colitis by Regulating TLR4/MyD88/NF-κB Pathway in Rats[J]. Front Immunol. 2022 Jan 11;12:817583.

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