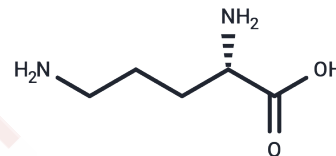


## L-Ornithine

## Chemical Properties

CAS No. :	70-26-8
Formula:	C <sub>5</sub> H <sub>12</sub> N <sub>2</sub> O <sub>2</sub>
Molecular Weight:	132.16
Storage:	Store under nitrogen Powder: -20°C for 3 years   In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



## Biological Description

Description	L-Ornithine ((S)-2, 5-diaminopentanoic acid) is a non-protein amino acid. L-Ornithine is mainly used in the urea cycle to remove excess nitrogen from the body. L-Ornithine is renoprotective. L-Ornithine has antifatigue effects.
Targets(IC50)	Amino Acids and Derivatives,Arginase,Endogenous Metabolite,Decarboxylase
In vitro	<b>METHODS:</b> HK-2 cells were treated with L-Ornithine (100, 300 μM) for 24 hours, and ROS levels were measured using fluorescence microscopy. <b>RESULTS:</b> Ornithine protected HK-2 cells from ROS production. [1]
In vivo	<b>METHODS:</b> To investigate the effect of L-Ornithine on peripheral clock gene expression, mice were orally treated with L-Ornithine (1000 mg/kg) for 3 days. <b>RESULTS:</b> The phase of PER2 gene expression in liver, submandibular gland and kidney was significantly advanced in L-Ornithine treated mice. [2] <b>METHODS:</b> To investigate the effect of L-Ornithine on sleep behavior, L-Ornithine was added to the diet of maternal mice, and its effect on the sleep behavior of offspring mice was observed. <b>RESULTS:</b> L-Ornithine supplementation increased sleep-like behavior in mice. [3] <b>METHODS:</b> To study the effect of L-Ornithine on acute necrotizing pancreatitis, rats were intraperitoneally injected with L-Ornithine (3 g/kg). <b>RESULTS:</b> Severe acute necrotizing pancreatitis was induced by L-Ornithine in rats. [4]

## Solubility Information

Solubility	DMSO: Insoluble, H <sub>2</sub> O: 50 mg/mL (378.33 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	7.5666 mL	37.8329 mL	75.6659 mL
5 mM	1.5133 mL	7.5666 mL	15.1332 mL
10 mM	0.7567 mL	3.7833 mL	7.5666 mL
50 mM	0.1513 mL	0.7567 mL	1.5133 mL

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

- Shin S, et al. L-ornithine activates Ca<sup>2+</sup> signaling to exert its protective function on human proximal tubular cells. *Cell Signal*. 2020 Mar;67:109484.
- Fukuda T, et al. L-Ornithine affects peripheral clock gene expression in mice. *Sci Rep*. 2016 Oct 5;6:34665.
- Takakura M, et al. Supplementation of L-Ornithine Could Increase Sleep-like Behavior in the Mouse Pups. *Metabolites*. 2022 Dec 9;12(12):1241.
- Rakonczay Z Jr, et al. A new severe acute necrotizing pancreatitis model induced by L-ornithine in rats. *Crit Care Med*. 2008 Jul;36(7):2117-27.

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