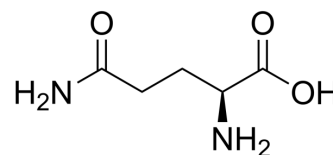


## L-Glutamine

Cat. No.:	HY-N0390
CAS No.:	56-85-9
Molecular Formula:	C <sub>5</sub> H <sub>10</sub> N <sub>2</sub> O <sub>3</sub>
Molecular Weight:	146.14
Target:	mGluR; Endogenous Metabolite; Ferroptosis
Pathway:	GPCR/G Protein; Neuronal Signaling; Metabolic Enzyme/Protease; Apoptosis
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 <sub>2</sub> O : 33.33 mg/mL (228.07 mM; ultrasonic and adjust pH to 1 with HCl)				
	Preparing Stock Solutions	<div>Solvent Concentration</div> Mass	1 mg	5 mg	10 mg
		1 mM	6.8428 mL	34.2138 mL	68.4275 mL
		5 mM	1.3686 mL	6.8428 mL	13.6855 mL
		10 mM	0.6843 mL	3.4214 mL	6.8428 mL
Please refer to the solubility information to select the appropriate solvent.					
In Vivo	1. Add each solvent one by one: PBS				
	Solubility: 7.69 mg/mL (52.62 mM); Clear solution; Need ultrasonic and warming and heat to 60°C				

### BIOLOGICAL ACTIVITY

Description	L-Glutamine (L-Glutamic acid 5-amide) is a non-essential amino acid present abundantly throughout the body and involved in many metabolic processes. L-Glutamine provides a source of carbons for oxidation in some cells <sup>[1][2]</sup> .	
IC <sub>50</sub> & Target	mGluR	Human Endogenous Metabolite
In Vitro	L-Glutamine is important as a precursor for peptide and protein synthesis, amino sugar synthesis, purine and pyrimidine and thus nucleic acid and nucleotide synthesis, and also provides a source of carbons for oxidation in some cells. L-Glutamine is the most abundant extracellular amino acid in vivo (0.7 mM compared to an approximate L-glutamate concentration of 20 μM) <sup>[1]</sup> . ?In BRIN-BD11 cells, culture for 24 h with 10 mM L-Glutamine compared with 1 mM resulted in substantial changes in gene expression with 148 genes upregulated more than 1.8-fold, and 18 downregulated more than 1.8-fold, including many genes involved in cellular signaling, metabolism, gene regulation, and the insulin-secretory response. L-Glutamine increases the	

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activity of the Ca<sup>2+</sup> regulated phosphatase calcineurin and the transcription factor Pdx1<sup>[2]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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## CUSTOMER VALIDATION

- Acta Pharm Sin B. 2022 Sep;12(9):3618-3638.
- Redox Biol. 2024 Mar 4;71:103112.
- Cell Rep. 2019 Jul 9;28(2):512-525.e6.
- J Transl Med. 2024 Jan 18;22(1):74.
- Int Immunopharmacol. 2023 May 12;120:110292.

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## REFERENCES

[1]. Mary Corless , et al. Glutamine Regulates Expression of Key Transcription Factor, Signal Transduction, Metabolic Gene, and Protein Expression in a Clonal Pancreatic Beta-Cell Line. J Endocrinol. 2006 Sep;190(3):719-27.

[2]. Newsholme P, et al. Glutamine and glutamate as vital metabolites. Braz J Med Biol Res. 2003 Feb;36(2):153-63. Epub 2003 Jan 29.

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

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