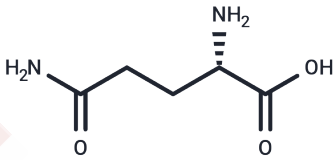
Data Sheet (Cat.No.T0326L)

TargetMol

L-Glutamine

Chemical Properties



CAS No. : 56-85-9

Formula: C5H10N2O3

Molecular Weight: 146.14

Storage: Store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	L-Glutamine (L-Glutamic acid 5-amide) is a non-essential amino acid that exists in large quantities in the human body and participates in many metabolic processes. L-Glutamine provides a carbon source for oxidation in certain cells.
Targets(IC50)	Ferroptosis,Endogenous Metabolite,GluR
In vitro	L-Glutamine (0.2 and 2 mM) but not D-Gln inhibits the generation of L-Arg by both Arg-depleted and nondepleted endothelial cells. L-Glutamine also inhibits the conversion of L-[14C]Cit to L-[14C]Arg by Arg-depleted endothelial cells. L-Glutamine interferes with the conversion of L-Cit to L-Arg probably by acting on argininosuccinate synthetase rather than argininosuccinate lyase. L-Glutamine also inhibits the generation of L-Arg by the monocyte-macrophage cell line J774 but has no effect on the conversion of L-Cit to L-Arg by these cells. [1] L-Glutamine metabolism stimulates Na+-H+exchange of acid-loaded porcine enterocytes by a mechanism not requiring activation of PKC. [2] L-Glutamine (0.2 mM and 2 mM) but not D-glutamine (2 mM), L-glutamic acid (2 mM) or ammonium chloride (1 mM) also inhibits the generation of L-arginine in endothelial cells. [3] L-glutamine promotes chromatin condensation and formation of crescent-like structures in the nucleus of murine primary microglia as well as of the microglial cell-line BV-2. [4]
In vivo	L-Glutamine at 0.5, 2 and 5 mM dose-dependently reduces H(2)O(2)- or LPS-induced cell death by 14%, 54% and 95%. L-Glutamine increases Glutamine concentrations in small-intestinal lumen and plasma, reduces intestinal expression of Toll-like receptor-4, active caspase-3 and NFkB, ameliorates intestinal injury, decreases rectal temperature, and enhanced growth performance in LPS-challenged piglets. [5]

Solubility Information

Solubility	DMSO: Insoluble, H2O: 40.7 mg/mL (278.5 mM),Sonication and heating are recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
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
50 mM	0.1369 mL	0.6843 mL	1.3686 mL

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

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Rhoads JM, et al. Am J Physiol,1994, 266(5 Pt 1), G828-838.
Liang L, Shen Z, Zhang K, et al.DLGAP5 upregulates E2F1 to promote prostate adenocarcinoma neuroendocrine differentiation.Life Sciences.2025: 123442.
Hecker M, et al. Br J Pharmacol,1990, 101(2), 237-239.
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