Product Datasheet

L-Glutamine-13C5

Catalog No. **BP-08797** · CAS **184161-19-1** · Form **free base** · Physical state **solid** · Color **White to off-white** · Version **1.0** · Revision **2026-11-13**

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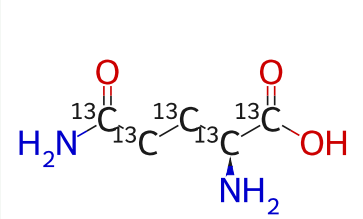
Molecular formula	$C_5H_{10}N_2O_3$
Molecular weight	**151.1078**

STRUCTURE



DESCRIPTION

L-Glutamine- 13C5 is the 13C-labeled L-Glutamine . L-Glutamine is an orally active nutritional agent and cellular metabolism regulator. L-Glutamine is taken up in a Na +-dependent manner and targets multiple key molecules including glutaminase, mTORC1, NF-κB, STAT-3 and HIF-1α. L-Glutamine enhances glutaminolytic catabolism, drives the conversion of glutamate to α-ketoglutarate, thereby regulating gene expression, integrating metabolic signals, mediating glutamine flux and maintaining redox homeostasis. L-Glutamine also promotes cell proliferation, osteogenic differentiation and fracture healing, exerts neuroprotective and cardioprotective effects, and inhibits osteoarthritis. L-Glutamine can be applied to research related to osteoporosis, osteoarthritis, ischemic stroke and acute cantharidin-induced cardiotoxicity .

BIOLOGICAL ACTIVITY

Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs

SOLUBILITY

In vitro	H2O : 10 mg/mL

REFERENCES

[1]. Zhou T, et al. Glutamine Metabolism Is Essential for Stemness of Bone Marrow Mesenchymal Stem Cells and Bone Homeostasis. Stem Cells Int. 2019;2019:8928934. Published 2019 Sep 12. [Content Brief]

[2]. Dos Santos G G, et al. L-Glutamine in vitro modulates some immunomodulatory properties of bone marrow mesenchymal stem cells[J]. Stem Cell Reviews and Reports, 2017, 13(4): 482-490.

[3]. Luo LL, et al. L-glutamine protects mouse brain from ischemic injury via up-regulating heat shock protein 70. CNS Neurosci Ther. 2019;25(9):1030-1041.

[4]. Shao H, et al. The protective effect of L-glutamine against acute Cantharidin-induced Cardiotoxicity in the mice. BMC Pharmacol Toxicol. 2020;21(1):71. Published 2020 Oct 1.