L-Phenylalanine-d_8

Cat. No.: HY-N0215S1

CAS No.: 17942-32-4

Molecular Formula: $C_9H_3D_8NO_2$

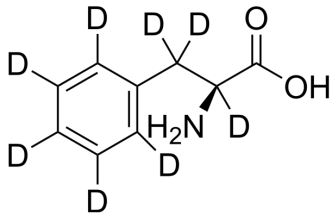
Molecular Weight: 173.24

Target: Calcium Channel; iGluR; Endogenous Metabolite

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling; Metabolic Enzyme/Protease

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

H_2O : 6.67 mg/mL (38.50 mM; Need ultrasonic)

H_2O : 6.67 mg/mL (38.50 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	5.7723 mL	28.8617 mL	57.7234 mL
5 mM	1.1545 mL	5.7723 mL	11.5447 mL
10 mM	0.5772 mL	2.8862 mL	5.7723 mL

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

BIOLOGICAL ACTIVITY

Description

L-Phenylalanine-d_8 is the deuterium labeled L-Phenylalanine. L-Phenylalanine ((S)-2-Amino-3-phenylpropionic acid) is an essential amino acid isolated from Escherichia coli. L-Phenylalanine is a α2δ subunit of voltage-dependent Ca+ channels antagonist with a Ki of 980 nM. L-phenylalanine is a competitive antagonist for the glycine- and glutamate-binding sites of N-methyl-D-aspartate receptors (NMDARs) (KB of 573 μM) and non-NMDARs, respectively. L-Phenylalanine is widely used in the production of food flavors and pharmaceuticals[1][2][3][4].

IC_{50} & Target

NMDA Receptor

In Vitro

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[1].

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

REFERENCES

[1]. Glushakov AV, et al. Long-term changes in glutamatergic synaptic transmission in phenylketonuria. Brain. 2005 Feb;128(Pt 2):300-7.

[2]. Glushakov AV, et al. L-phenylalanine selectively depresses currents at glutamatergic excitatory synapses. J Neurosci Res. 2003 Apr 1;72(1):116-24.

[3]. Glushakov AV, et al. Specific inhibition of N-methyl-D-aspartate receptor function in rat hippocampal neurons by L-phenylalanine at concentrations observed during phenylketonuria. Mol Psychiatry. 2002;7(4):359-67.

[4]. Mortell KH, et al. Structure-activity relationships of alpha-amino acid ligands for the alpha2delta subunit of voltage-gated calcium channels. Bioorg Med Chem Lett. 2006 Mar 1;16(5):1138-41.

[5]. Wu WB, et al. Enhancement of l-phenylalanine production in Escherichia coli by heterologous expression of Vitreoscilla hemoglobin. Biotechnol Appl Biochem. 2018 May;65(3):476-483.

[6]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019;53(2):211-216.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA