

Product Data Sheet

Product Name: L-Phenylalanine-d2

Cat. No.: GC65050

Chemical Properties

Cas. No. 221346-31-2

Formula C₉H₉D₂NO₂

M.Wt 167.2

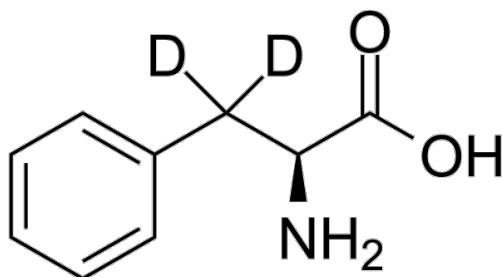
Solubility DMSO : 2.5 mg/mL (14.95 mM; ultrasonic and warming and heat to 60°C)

Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Background

L-Phenylalanine-d2 ((S)-2-Amino-3-phenylpropionic acid-d2) 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 α 2 δ subunit of voltage-dependent Ca²⁺ channels antagonist with a K_i of 980 nM. L-phenylalanine is a competitive antagonist for the glycine- and glutamate-binding sites of N-methyl-D-aspartate receptors (NMDARs) (K_B of 573 μ M) and non-NMDARs, respectively. L-Phenylalanine is widely used in the production of food flavors and

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

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pharmaceuticals[1][2][3][4].

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].

- [1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother*. 2019;53(2):211-216. [2]. Glushakov AV, et al. Long-term changes in glutamatergic synaptic transmission in phenylketonuria. *Brain*. 2005 Feb;128(Pt 2):300-7. [3]. Glushakov AV, et al. L-phenylalanine selectively depresses currents at glutamatergic excitatory synapses. *J Neurosci Res*. 2003 Apr 1;72(1):116-24. [4]. 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. [5]. 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. [6]. 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.

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