L-DOPA-d_6

Cat. No.: HY-N0304S

CAS No.: 713140-75-1

Molecular Formula: $C_9H_5D_6NO_4$

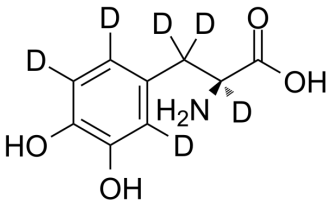
Molecular Weight: 203.22

Target: Dopamine Receptor; Endogenous Metabolite

Pathway: GPCR/G Protein; 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

0.1 M HCL : 20 mg/mL (98.42 mM; ultrasonic and warming and adjust pH to 2 with HCl and heat to 60°C)

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H_2O : 1 mg/mL (4.92 mM; Need ultrasonic)

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Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	4.9208 mL	24.6039 mL	49.2078 mL
	5 mM	0.9842 mL	4.9208 mL	9.8416 mL
	10 mM	0.4921 mL	2.4604 mL	4.9208 mL

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

BIOLOGICAL ACTIVITY

Description

L-DOPA-d_6 is the deuterium labeled L-DOPA. L-DOPA (Levodopa) is an orally active metabolic precursor of neurotransmitters dopamine. L-DOPA can cross the blood-brain barrier and is converted into dopamine in the brain. L-DOPA has anti-allodynic effects and the potential for Parkinson's disease[1][2][3].

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

[2]. Hyland K, et al. Aromatic L-amino acid decarboxylase deficiency: diagnostic methodology. Clin Chem. 1992 Dec;38(12):2405-10.

[3]. Merims D, et al. Dopamine dysregulation syndrome, addiction and behavioral changes in Parkinson's disease. Parkinsonism Relat Disord. 2008;14(4):273-80. Epub 2007 Nov 7.

[4]. Perez-Pardo P, et al. Additive Effects of Levodopa and a Neurorestorative Diet in a Mouse Model of Parkinson's Disease. Front Aging Neurosci. 2018 Aug 3;10:237.

[5]. Park HJ, et al. Anti-allodynic effects of levodopa in neuropathic rats. Yonsei Med J. 2013 Mar 1;54(2):330-5.

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