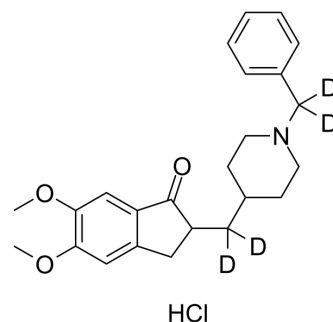


Donepezil-d₄ hydrochloride

Cat. No.:	HY-B0034S1	
CAS No.:	1219798-88-5	
Molecular Formula:	C ₂₄ H ₂₆ D ₄ ClNO ₃	
Molecular Weight:	419.98	
Target:	Cholinesterase (ChE)	
Pathway:	Neuronal Signaling	
Storage:	Powder	-20°C 3 years 4°C 2 years
	In solvent	-80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 1 mg/mL (2.38 mM)
 Ethanol : ≥ 1 mg/mL (2.38 mM)
 DMF : ≥ 1 mg/mL (2.38 mM)
 PBS (pH 7.2) : ≥ 0.5 mg/mL (1.19 mM)
 * "≥" means soluble, but saturation unknown.

Solvent	Mass	Concentration		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	2.3811 mL	11.9053 mL	23.8107 mL
	5 mM	---	---	---
	10 mM	---	---	---

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

BIOLOGICAL ACTIVITY

Description

Donepezil-d₄ (hydrochloride) is the deuterium labeled Donepezil hydrochloride. Donepezil Hydrochloride (E2020) is a reversible, selective AChE inhibitor with an IC₅₀ of 6.7 nM for AChE activity. Donepezil shows high selectivity for AChE over BuChE[1]. Donepezil exhibits neuroprotective effect on Aβ₄₂ neurotoxicity[2].

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

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- [1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother.* 2019;53(2):211-216.
- [2]. H Ogura, et al. Comparison of inhibitory activities of donepezil and other cholinesterase inhibitors on acetylcholinesterase and butyrylcholinesterase in vitro. *Methods Find Exp Clin Pharmacol.* 2000 Oct;22(8):609-13.
- [3]. Min-Young Noh, et al. Neuroprotective effects of donepezil through inhibition of GSK-3 activity in amyloid-beta-induced neuronal cell death. *J Neurochem.* 2009 Mar;108(5):1116-25.
- [4]. Chang Yell Shin, et al. The Effects of Donepezil, an Acetylcholinesterase Inhibitor, on Impaired Learning and Memory in Rodents. *Biomol Ther (Seoul).* 2018 May 1;26(3):274-281.
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Caution: Product has not been fully validated for medical applications. For research use only.

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