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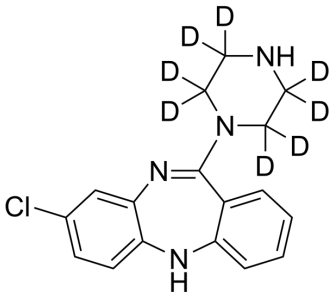
N-Desmethylclozapine-d_8

Cat. No.:	HY-G0021S
CAS No.:	1189888-77-4
Molecular Formula:	$C_{17}H_9D_8ClN_4$
Molecular Weight:	320.85
Target:	mAChR; Opioid Receptor; Drug Metabolite; Virus Protease
Pathway:	GPCR/G Protein; Neuronal Signaling; Metabolic Enzyme/Protease; Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	N-Desmethylclozapine-d_8 is the deuterium labeled N-Desmethylclozapine. N-Desmethylclozapine is a major active metabolite of the atypical antipsychotic agent Clozapine. N-Desmethylclozapine is a potent, allosteric and partial M1 receptors agonist (EC50=115 nM) and is able to potentiate hippocampal N-methyl-d-aspartate (NMDA) receptor currents through M1 receptor activation. N-Desmethylclozapine is also a δ-opioid agonist[1][2].	
IC_{50} & Target	mAChR1	δ Opioid Receptor/DOR
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]. Odagaki Y, et al. Comparative analysis of pharmacological properties of xanomeline and N-desmethylclozapine in rat brain membranes. J Psychopharmacol. 2016 Sep;30(9):896-912

[3]. Sugawara Y, et al. Electrophysiological evidence showing muscarinic agonist-antagonist activities of N-desmethylclozapine using hippocampal excitatory and inhibitory neurons. Brain Res. 2016 Jul 1;1642:255-62

[4]. Gigout S, et al. Different pharmacology of N-desmethylclozapine at human and rat M2 and M 4 mAChRs in neocortex. Naunyn Schmiedebergs Arch Pharmacol. 2015 May;388(5):487-96

[5]. Himmerich H, et al. Impact of clozapine, N-desmethylclozapine and chlorpromazine on thromboxane production in vitro. Med Chem. 2012 Nov;8(6):1032-8.

[6]. Li Z, et al. N-desmethylclozapine, a major metabolite of clozapine, increases cortical acetylcholine and dopamine release in vivo via stimulation of M1 muscarinic receptors. Neuropsychopharmacology. 2005 Nov;30(11):1986-95.

[7]. Medigeshi GR, et al. N-Desmethylclozapine, Fluoxetine and Salmeterol inhibit post-entry stages of dengue virus life-cycle. Antimicrob Agents Chemother. 2016 Aug 29.

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

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