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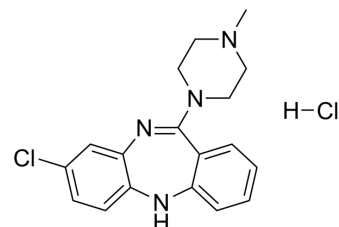
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Clozapine hydrochloride

Cat. No.:	HY-14539A
CAS No.:	54241-01-9
Molecular Formula:	C ₁₈ H ₂₀ Cl ₂ N ₄
Molecular Weight:	363.28
Target:	Dopamine Receptor; mAChR; Adrenergic Receptor; 5-HT Receptor
Pathway:	GPCR/G Protein; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Clozapine hydrochloride (HF 1854 hydrochloride) is an antipsychotic used for the research of schizophrenia. Clozapine hydrochloride has high affinity for a number of neuroreceptors. Clozapine hydrochloride is a potent antagonist of dopamine D ₂ with a K _i of 75 nM. Clozapine hydrochloride inhibits the muscarinic M ₁ receptor and serotonin 5HT _{2A} receptor with K _i s of 9.5 nM and 4 nM, respectively ^{[1][2][3]} . Clozapine hydrochloride is also a potent and selective agonist at the muscarinic M ₄ receptor (EC ₅₀ =11 nM) ^[4] .			
IC₅₀ & Target	5-HT _{2A} Receptor 4 nM (K _i)	5-HT ₆ Receptor	Human 5-HT ₇ Receptor	mAChR1 9.5 nM (K _i)
	mAChR4 11 nM (EC ₅₀)	α ₂ -adrenergic receptor 51 nM (K _i)	D ₂ Receptor 75 nM (K _i)	
In Vivo	Clozapine hydrochloride (25 mg/kg/day; i.p.; 21 days) shows antipsychotic effects in lysergic acid diethylamide-induced psychosis mouse model ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.			
	Animal Model:	Male 129 S6/Sv mice, lysergic acid diethylamide (LSD)-induced psychosis model ^[3]		
	Dosage:	25 mg/kg/day		
	Administration:	Intraperitoneal injection, 21 days		
	Result:	Decreased head-twitch response, reduced 5-HT _{2A} mRNA, rescued induction of c-fos, but not egr-1 and egr-2.		

CUSTOMER VALIDATION

- Mol Psychiatry. 2021 Jun;26(6):2514-2532.
- Eur J Pharm Sci. 2023 May 22;106475.
- Eur J Pharm Sci. 2021, 105889.

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REFERENCES

- [1]. Seeman P, et al. Clozapine, a fast-off-D2 antipsychotic. ACS Chem Neurosci. 2014 Jan 15;5(1):24-9.
- [2]. Zhukovskaya NL, et al. Clozapine downregulates 5-hydroxytryptamine6 (5-HT6) and upregulates 5-HT7 receptors in HeLa cells. Neurosci Lett. 2000 Jul 21;288(3):236-40.
- [3]. Moreno JL, et al. Persistent effects of chronic clozapine on the cellular and behavioral responses to LSD in mice. Psychopharmacology (Berl). 2013 Jan;225(1):217-26.
- [4]. Zorn SH, et al. Clozapine is a potent and selective muscarinic M4 receptor agonist. Eur J Pharmacol. 1994 Nov 15;269(3):R1-2.
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Caution: Product has not been fully validated for medical applications. For research use only.

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