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- Expressversand

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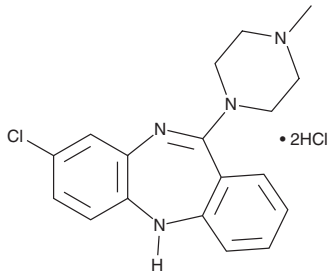
PRODUCT INFORMATION

Clozapine (hydrochloride)

Item No. 25779

Formal Name:	8-chloro-11-(4-methyl-1-piperazinyl)-5H-dibenzo[b,e][1,4]diazepine, dihydrochloride
MF:	$C_{18}H_{19}ClN_4 \bullet 2HCl$
FW:	399.7
Purity:	≥98%
UV/Vis.:	λ_{max}: 213, 228, 259 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Clozapine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the clozapine (hydrochloride) in the solvent of choice. Clozapine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of clozapine (hydrochloride) in these solvents is approximately 25 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of clozapine (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of clozapine (hydrochloride) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Clozapine is a partial agonist of the serotonin (5-HT) receptor subtype 5-HT_{1A} (K_i = 180 nM).[1,2] It also binds to the 5-HT_{2A}, 5-HT_{2C}, 5-HT_3, 5-HT_6 and 5-HT_7 receptors (K_is = 3.3, 13, 110, 4, and 21 nM, respectively), as well as the histamine H_1 and α_1-adrenergic receptors (K_is = 2.1 and 23 nM, respectively). It does not bind to the 5-HT_{1B} receptor and has a lower affinity for dopamine receptors (K_is = 540, 150, and 360 nM for D_{1-3}, respectively). Clozapine induces the release of glutamate and D-serine, an agonist at the glycine site of the NMDA receptor, from astrocytes, and reduces the expression of astrocytic glutamate transporters.[3] It reverses locomotor hyperactivity and deficits in prepulse inhibition of acoustic startle in a rat neonatal ventral hippocampal ibotenic lesion model of schizophrenia when administered at a dose of 2.5 mg/kg per day.[4] Formulations containing clozapine have been used in the treatment of schizophrenia.

References

1. Millan, M.J. *J. Pharmacol. Exp. Ther.* **295(3)**, 853-861 (2000).
2. Schotte, A., Janssen, P.F., Gommeren, W., *et al. Psychopharmacology (Berl)* **124(1-2)**, 57-73 (1996).
3. Tanahashi, S., Yamamura, S., Nakagawa, M., *et al. Br. J. Pharmacol.* **165**, 1543-1555 (2012).
4. Rueter, L.E., Ballard, M.E., Gallagher, K.B., *et al. Psychopharmacology (Berl)* **176(3-4)**, 312-319 (2004).

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