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DATASHEET

Clozapine dihydrochloride (water soluble)

Product overview

Name	Clozapine dihydrochloride (water soluble)
Cat No	HB6129
Alternative names	CLZ-ChemoNM
Biological action	Agonist
Purity	>98%
Customer comments	*I am very pleased with this product: Clozapine dihydrochloride (clozapine-2HCl). It dissolves in saline (0.9% NaCl) well and produces the expected biological effects when injected into the mouse. Its water solubility is highly useful because the free base clozapine does not dissolve in water/saline, limiting its use in intact animals.* **Verified customer, UTHSC**
Description	Water soluble prototypic, atypical antipsychotic. Binds to both serotonin and dopamine receptors.

Images

Biological Data

Biological description

Water soluble clozapine is a prototypic, atypical antipsychotic which binds to both serotonin and dopamine receptors (K_i values are 35, 83 and 22, 250 and 141 nM at D_2, D_3 and D_4, D_5, D_1 and 12.6 and 13.2 nM at 5-HT_{2A} and 5-HT_{2C} receptors respectively) and also shows activity at other receptors.

Clozapine shows high BBB permeability and is active *in vivo*. It shows antipsychotic, antidepression and anxiolytic activites.

Recently, clozapine (which CNO rapidly converts to) has been indicated to show high DREADD (hM3Dq and hM4Di) affinity and potency. Subthreshold clozapine injections are indicated to induce preferential DREADD-mediated behaviors.

Clozapine also available

Solubility & Handling

Storage instructions	-20°C
Solubility overview	Soluble in water (100 mM). Always store solutions at -20°C.
Handling	Storage of solid

- Store at -20°C.
- Please note that the compound is a hydroscopic solid and contact with air may cause material to become sticky. Product performance should not be affected but we recommend storing the material in a sealed jar.

Storage of solutions

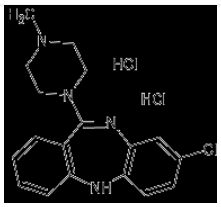
- Make up solutions and use immediately.
- If storage of solutions is required, you should aliquot out the solution into tightly sealed vials and store at -20°C and store these for up to one month.
- Allow the product to equilibrate to RT for at least one hour before opening and using.

Storage of solutions at room temperature

- We recommend only keeping solutions at room temperature (25°C) for a few days as our studies have shown that after 96 hours the purity of the compound in solution drops to ~95% and will continue to drop over time.

Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

Chemical Data

Chemical name	8-Chloro-11-(4-methyl-1-piperazinyl)-5H-dibenzo[b,e][1,4]diazepine dihydrochloride
Molecular Weight	399.75
Chemical structure	
Molecular Formula	$C_{18}H_{19}ClN_4 \cdot 2HCl$
CAS Number	54241-01-9
PubChem identifier	148669
SMILES	CN1CCN(CC1)C2=C3C=CC=CC3=NC4=C(N2)C=C(C=C4)Cl.Cl
Source	Synthetic
InChi	InChI=1S/C18H19ClN4.ClH/c1-22-8-10-23(11-9-22)18-14-4-2-3-5-15(14)20-16-7-6-13(19)12-17(16)21-18;/h2-7,12,21H,8-11H2,1H3;1H
InChiKey	VFDNENKXDGAOSN-UHFFFAOYSA-N
Appearance	Orange solid

References

Antipsychotic drugs: importance of dopamine receptors for mechanisms of therapeutic actions and side effects.

Sunahara RK *et al*Strange PG (2001) Pharmacol Rev 53(1)
PubMedID 11171942

Cloning of the gene for a human dopamine D5 receptor with higher affinity for dopamine than D1.

Sunahara RK *et al* (1991) Nature 350(6319)
PubMedID 1826762

Differential regulation of rat 5-HT2A and 5-HT2C receptors after chronic treatment with clozapine, chlorpromazine and three putative atypical antipsychotic drugs.

Kuoppamã?ki M *et al* (1995) Neuropsychopharmacology 13(2)
PubMedID 8597525

Chemogenetics revealed: DREADD occupancy and activation via converted clozapine.

Gomez et al (2017) Science 357(6350)
PubMedID 28774929

DREADDs: The Power of the Lock, the Weakness of the Key. Favoring the Pursuit of Specific Conditions Rather than Specific Ligands.

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