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## DATASHEET

Clozapine dihydrochloride (water soluble)

### Product overview

<b>Name</b>	Clozapine dihydrochloride (water soluble)
<b>Cat No</b>	HB6129
<b>Alternative names</b>	CLZ-ChemoNM
<b>Biological action</b>	Agonist
<b>Purity</b>	>98%
<b>Customer comments</b>	<i>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. <b>Verified customer, UTHSC</b></i>
<b>Description</b>	Water soluble prototypic, atypical antipsychotic. Binds to both serotonin and dopamine receptors.

### Images



### Biological Data

<b>Biological description</b>	<p>Water soluble clozapine is a prototypic, atypical antipsychotic which binds to both serotonin and dopamine receptors (<math>K_i</math> values are 35, 83 and 22, 250 and 141 nM at <math>D_2</math>, <math>D_3</math> and <math>D_4</math>, <math>D_5</math>, <math>D_1</math> and 12.6 and 13.2 nM at 5-HT<sub>2A</sub> and 5-HT<sub>2C</sub> receptors respectively) and also shows activity at other receptors.</p> <p>Clozapine shows high BBB permeability and is active <i>in vivo</i>. It shows antipsychotic, antidepressant and anxiolytic activities.</p> <p>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.</p> <p>Clozapine also <a href="#">available</a></p>
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### Solubility & Handling

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

- Store at -20 °C.

- Please note that the compound is a hygroscopic 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.

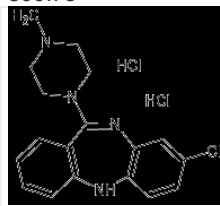
#### Storage of solutions at room temperature

- 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

<b>Chemical name</b>	8-Chloro-11-(4-methyl-1-piperazinyl)-5H-dibenzo[b,e][1,4]diazepine dihydrochloride
<b>Molecular Weight</b>	399.75
<b>Chemical structure</b>	
<b>Molecular Formula</b>	C <sub>18</sub> H <sub>19</sub> ClN <sub>4</sub> · 2HCl
<b>CAS Number</b>	54241-01-9
<b>PubChem identifier</b>	148669
<b>SMILES</b>	CN1CCN(CC1)C2=C3C=CC=CC3=NC4=C(N2)C=C(C=C4)Cl.Cl
<b>Source</b>	Synthetic
<b>InChi</b>	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
<b>InChiKey</b>	VFDNENKXDGAOSN-UHFFFAOYSA-N
<b>Appearance</b>	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.

Kuoppamäki 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.

Goutaudier *et al* (2019) eNeuro 6

**PubMedID** [31562177](#)

