Product overview

<table>
<thead>
<tr>
<th>Name</th>
<th>Clozapine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat No</td>
<td>HB1607</td>
</tr>
<tr>
<td>Alternative names</td>
<td>CLZ-ChemoNM</td>
</tr>
<tr>
<td>Biological action</td>
<td>Agonist</td>
</tr>
<tr>
<td>Purity</td>
<td>&gt;99%</td>
</tr>
<tr>
<td>Description</td>
<td>Prototypic, atypical antipsychotic, binds to both serotonin and dopamine receptors</td>
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</tbody>
</table>

Biological Data

**Biological description**
Clozapine is a prototypic, atypical antipsychotic which binds to both serotonin and dopamine receptors (K<sub>i</sub> values are 35, 83 and 22, 250 and 141 nM at D<sub>2</sub>, D<sub>3</sub> and D<sub>4</sub>, D<sub>5</sub>, D<sub>1</sub> 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.

Clozapine shows high BBB permeability and is active in vivo. It shows antipsychotic, antidepressant and anxiolytic activities.

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.

Water soluble version of clozapine also available.

Solubility & Handling

**Storage instructions**
Room temperature

**Solubility overview**
Soluble in DMSO (100 mM) and in ethanol (50 mM)

**Important**
This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.
Chemical name: 8-Chloro-11-(4-methyl-1-piperazinyl)-5H-dibenzo[b,e][1,4]diazepine
Molecular Weight: 326.83

Chemical structure:
![Chemical Structure Image]

Molecular Formula: C₁₈H₁₉ClN₄
CAS Number: 5786-21-0
PubChem identifier: 2818
SMILES: CN1CCN(CC(CCl)C2=C3C=CC=CC3=NC(N2)C=C(C=C4)Cl
InChI: InChI=1S/C18H19ClN4/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
InChiKey: ZUXABONWMNSFBN-UHFFFAOYSA-N
MDL number: MFCD00153785
Appearance: Yellow solid

References

**Antipsychotic drugs: importance of dopamine receptors for mechanisms of therapeutic actions and side effects.**
PubMedID: 11171942

**Cloning of the gene for a human dopamine D5 receptor with higher affinity for dopamine than D1.**
PubMedID: 1826762

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