Hello Bio, Inc. 304 Wall St., Princeton, NJ 08540 USA

T. 609-683-7500 F. 609-228-4994

customercare-usa@hellobio.com



## DATASHEET

Clozapine

#### **Product overview**

Name Clozapine Cat No HB1607 **Alternative names** CLZ-ChemoNM **Biological action** Agonist **Purity** >99%

Description Prototypic, atypical antipsychotic, binds to both serotonin and dopamine receptors

## **Images**



## **Biological Data**

**Biological description** 

Clozapine is a prototypic, atypical antipsychotic which binds to both serotonin and dopamine receptors (K, 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<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 antisychotic, 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.

Water soluble version of clozapine also available

# Solubility & Handling

Solubility overview Storage instructions Storage of solutions Soluble in DMSO (100 mM) and in ethanol (50 mM)

Room temperature

Prepare and use solutions on the same day if possible. Store solutions at -20°C for up to one month if

storage is required. Equilibrate to RT and ensure the solution is precipitate free before use.

**Shipping Conditions** 

Stable for ambient temperature shipping. Follow storage instructions on receipt.

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

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 Molecular Weight Chemical structure 8-Chloro-11-(4-methyl-1-piperazinyl)-5*H*-dibenzo[*b*,*e*][1,4]diazepine

326.83

N CI

Molecular Formula
CAS Number
PubChem identifier

**SMILES** CN1CCN(CC1)C2=C3C=CC3=NC4=C(N2)C=C(C=C4)CI

InChi InChi=1S/C18H19CIN4/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)21-1

8/h2-7,12,21H,8-11H2,1H3

InChiKey ZUXABONWMNSFBN-UHFFFAOYSA-N

C<sub>18</sub>H<sub>19</sub>CIN<sub>4</sub>

5786-21-0

2818

MDL numberMFCD00153785AppearanceYellow solid

#### References

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

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.

Goutaudier et al (2019) eNeuro 6

PubMedID 31562177