Datasheet

Product overview

Name
Clozapine
Cat No
HB1607
Short description
Prototypic, atypical antipsychotic, binds to both serotonin and dopamine receptors

Biological description
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, antidepressant and anxiolytic activites.

Recently, clozapine (which CNO rapidly coverts 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.

Biological action
Agonist
Purity
>99%

Properties

Chemical name
8-Chloro-11-(4-methyl-1-piperazinyl)-5H-dibenzo[b,e][1,4]diazepine
Molecular Weight
326.83

Chemical structure

![Chemical structure of Clozapine](image)

Molecular Formula
C_{18}H_{19}ClN_4
CAS Number
5786-21-0
PubChem identifier
2818
SMILES
CN1CCN(CC1)C2=C3C=CC3=NC4=C[N2]C=C(C=C4)Cl
InChI
InChl=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
InChIKey
ZUXABONWMNSFBN-UHFFFAOYSA-N
MDL number
MFCD00153785
Appearance
Yellow solid
Storing and Using Your Product

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.

References for Clozapine

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.
PubMedID: 28774929