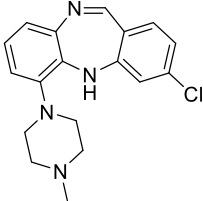


Product data sheet



MedKoo Cat#: 317562 Name: Clozapine CAS#: 5786-21-0 (free base) Chemical Formula: C ₁₈ H ₁₉ ClN ₄ Exact Mass: 326.12982 Molecular Weight: 326.82	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

Clozapine is an atypical antipsychotic drug because it binds to serotonin as well as dopamine receptors. Clozapine is a partial agonist at the 5-HT_{1A} subunit of the serotonin receptor, putatively improving depression, anxiety, and the negative cognitive symptoms associated with schizophrenia. A direct interaction of clozapine with the GABAB receptor has also been shown. GABAB receptor-deficient mice exhibit increased extracellular dopamine levels and altered locomotor behaviour equivalent to that in schizophrenia animal models.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	39.42	120.62
DMSO:PBS (pH 7.2) (1:1)	0.5	1.53
DMF	10.0	30.60
Ethanol	35.0	107.09

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.06 mL	15.30 mL	30.60 mL
5 mM	0.61 mL	3.06 mL	6.12 mL
10 mM	0.31 mL	1.53 mL	3.06 mL
50 mM	0.06 mL	0.31 mL	0.61 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Gligorijević N, Vasović T, Lević S, Miljević Č, Nedić O, Nikolić M. Atypical antipsychotic clozapine binds fibrinogen and affects fibrin formation. *Int J Biol Macromol.* 2020 Jul 1;154:142-149. doi: 10.1016/j.ijbiomac.2020.03.119. Epub 2020 Mar 14. PMID: 32184141.
2. Giridharan VV, Scaini G, Colpo GD, Doifode T, Pinjari OF, Teixeira AL, Petronilho F, Macêdo D, Quevedo J, Barichello T. Clozapine Prevents Poly (I:C) Induced Inflammation by Modulating NLRP3 Pathway in Microglial Cells. *Cells.* 2020 Feb 28;9(3):577. doi: 10.3390/cells9030577. PMID: 32121312; PMCID: PMC7140445.

In vivo study

Product data sheet



1. Ceylan U, Hauptelshofer S, Kämper L, Dann J, Ambrosius B, Gold R, Faissner S. Clozapine Regulates Microglia and Is Effective in Chronic Experimental Autoimmune Encephalomyelitis. *Front Immunol.* 2021 May 3;12:656941. doi: 10.3389/fimmu.2021.656941. PMID: 34012440; PMCID: PMC8126707.
2. Robichon K, Patel V, Connor B, La Flamme AC. Clozapine reduces infiltration into the CNS by targeting migration in experimental autoimmune encephalomyelitis. *J Neuroinflammation.* 2020 Feb 12;17(1):53. doi: 10.1186/s12974-020-01733-4. PMID: 32050980; PMCID: PMC7014621.

7. Bioactivity

Biological target:

Clozapine is a potent antagonist of dopamine and a number of other receptors, with a K_i of 9.5 nM for muscarinic M1 receptor.

In vitro activity

Clozapine binding affected fibrin formation by reducing coagulation speed and thickness of fibrin fibers suggesting that in the presence of clozapine, fibrinogen may acquire thrombogenic characteristics. ORAC and HORAC assays showed that clozapine reduced free radical-induced oxidation of fibrinogen.

Reference: *Int J Biol Macromol.* 2020 Jul 1;154:142-149. <https://pubmed.ncbi.nlm.nih.gov/32184141/>

In vivo activity

While control animals treated with vehicle showed marked signs of EAE with a mean score of 4.3 ± 0.7 at the peak of EAE and chronification over more than 50 d, clozapine led to a dose-dependent reduction of clinical signs (Figure 2B). Disease incidence declined dose-dependently following clozapine administration (Additional Table 3). Moreover, the onset of clinical signs was delayed by 3 d in 15 mg/kg treated mice.

Reference: *Front Immunol.* 2021; 12: 656941. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8126707/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.