

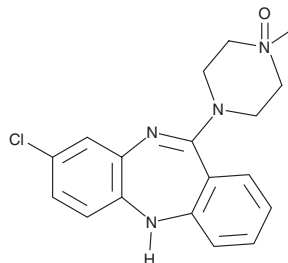
# PRODUCT INFORMATION



## Clozapine N-oxide

Item No. 16882

**CAS Registry No.:** 34233-69-7  
**Formal Name:** 8-chloro-11-(4-methyl-4-oxido-1-piperaziny)-5H-dibenzo[b,e][1,4]diazepine  
**Synonym:** CNO  
**MF:** C<sub>18</sub>H<sub>19</sub>ClN<sub>4</sub>O  
**FW:** 342.8  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 214, 260 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Clozapine N-oxide is supplied as a crystalline solid. A stock solution may be made by dissolving the clozapine N-oxide in the solvent of choice. Clozapine N-oxide is soluble in organic solvents such as DMSO and dimethyl formamide which should be purged with an inert gas. The solubility of clozapine N-oxide in these solvents is approximately 2 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of clozapine N-oxide can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of clozapine N-oxide in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Clozapine-N-oxide is a major metabolite of clozapine (Item No. 12059) and an activator of designer receptors exclusively activated by designer drugs (DREADDs) derived from human muscarinic acetylcholine receptors (EC<sub>50</sub>s = 16.7, 323, 17.4, 18.3, and 18.7 nM for PASMCS expressing hM<sub>1-5</sub>D receptors, respectively).<sup>1,2</sup> It prevents action potential firing in cultured hippocampal neurons transiently expressing hM<sub>4</sub>D receptors.<sup>2</sup> Clozapine-N-oxide increases glutamate in the nucleus accumbens core and inhibits cue-induced reinstatement of cocaine-seeking behavior in rats transfected with hM3Dq DREADD receptors.<sup>3</sup>

### References

1. Eiermann, B., Engel, G., Johansson, I., *et al.* The involvement of CYP1A2 and CYP3A4 in the metabolism of clozapine. *Br. J. Clin. Pharmacol.* **44(5)**, 439-446 (1997).
2. Armbruster, B.N., Li, X., Pausch, M.H., *et al.* Evolving the lock to fit the key to create a family of G protein-coupled receptors potentially activated by an inert ligand. *PNAS* **104(12)**, 5163-5168
3. Scofield, M.D., Boger, H.A., Smith, R.J., *et al.* Gq-DREADD selectively initiates glial glutamate release and inhibits cue-induced cocaine seeking. *Biol. Psychiatry* **78(7)**, 441-451 (2015).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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