

**Product Name:** Clozapine *N*-oxide

**Catalog No.:** 4936

**Batch No.:** 16

CAS Number: 34233-69-7

IUPAC Name: 8-Chloro-11-(4-methyl-4-oxido-1-piperaziny)-5*H*-dibenzo[*b,e*][1,4]diazepine

**1. PHYSICAL AND CHEMICAL PROPERTIES**

**Batch Molecular Formula:** C<sub>18</sub>H<sub>19</sub>ClN<sub>4</sub>O·H<sub>2</sub>O

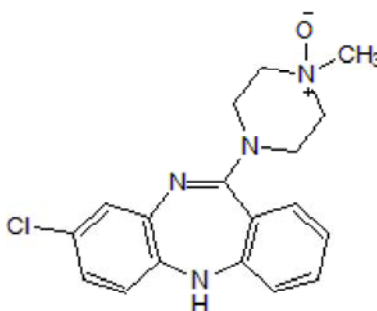
**Batch Molecular Weight:** 360.84

**Physical Appearance:** Yellow solid

**Solubility:** DMSO to 20 mM

**Storage:** Store at RT

**Batch Molecular Structure:**



**2. ANALYTICAL DATA**

**HPLC:** Shows 99.6% purity

**<sup>1</sup>H NMR:** Consistent with structure

**Mass Spectrum:** Consistent with structure

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	59.91	5.87	15.53
Found	60.01	5.94	15.57

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**bio-techne.com**

info@bio-techne.com

techsupport@bio-techne.com

**North America**

Tel: (800) 343 7475

**China**

info.cn@bio-techne.com

Tel: +86 (21) 52380373

**Europe Middle East Africa**

Tel: +44 (0)1235 529449

**Rest of World**

www.tocris.com/distributors

Tel: +1 612 379 2956

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**Description:**

Clozapine N-oxide is a synthetic ligand for human muscarinic engineered receptors, designer receptors activated by designer drugs (DREADD). Binds and activates hM<sub>3</sub>D<sub>q</sub> and hM<sub>4</sub>D<sub>i</sub> DREADDs in vitro and in vivo. Metabolite of clozapine (Cat. No. 0444). Shown to be a P-glycoprotein (P-gp) efflux pump substrate. Example Applications of Clozapine N-oxide (CNO): Silences hippocampal neurons expressing hM<sub>4</sub>D<sub>i</sub> DREADDs in vitro Inhibits locomotor activity of mice expressing hM<sub>3</sub>D<sub>q</sub> in GABAergic VTA neurons Inhibits short term memory retrieval in mice expressing hM<sub>4</sub>D<sub>i</sub> in hippocampal neurons Induces heat and mechanical hypersensitivity in mice expressi... Please see product specific page on [www.tocris.com](http://www.tocris.com) for full description.

**Physical and Chemical Properties:**

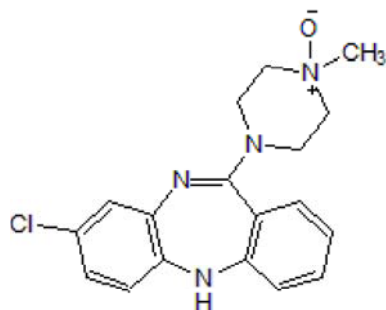
Batch Molecular Formula: C<sub>18</sub>H<sub>19</sub>ClN<sub>4</sub>O·H<sub>2</sub>O

Batch Molecular Weight: 360.84

Physical Appearance: Yellow solid

**Minimum Purity:** ≥99%

**Batch Molecular Structure:**



**References:**

**Gomez et al** (2017) Chemogenetics revealed: DREADD occupancy and activation via converted cloz. *Science* **357** 503. PMID: 28774929.

**Nakajima et al** (2016) G<sub>s</sub>-coupled GPCR signalling in AgRP neurons triggers sustained increase in food intake. *Nat. Commun.* **8** 10268. PMID: 26743492.

**Roth** (2016) DREADDs for Neuroscientists. *Neuron* **89** 683. PMID: 26889809.

**Storage:** Store at RT

**Solubility & Usage Info:**

DMSO to 20 mM

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

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[www.tocris.com/distributors](http://www.tocris.com/distributors)

Tel: +1 612 379 2956