

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

**Catalog No.:** 4936

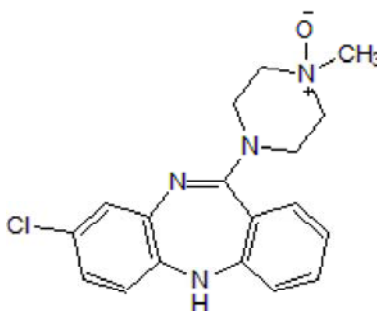
**Batch No.:** 14

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.2H<sub>2</sub>O  
**Batch Molecular Weight:** 378.85  
**Physical Appearance:** Yellow solid  
**Solubility:** DMSO to 20 mM  
 ethanol to 10 mM with gentle warming  
**Storage:** Store at RT  
**Batch Molecular Structure:**



**2. ANALYTICAL DATA**

**TLC:** R<sub>f</sub> = 0.5 (Dichloromethane:Methanol [9:1])  
**HPLC:** Shows 99.9% purity  
<sup>1</sup>H NMR: Consistent with structure  
 Mass Spectrum: Consistent with structure  
 Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	57.07	6.12	14.79
Found	57.17	6	14.8

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**Description:**

Metabolite of clozapine (Cat. No. 0444). Activates human muscarinic designer receptors (DREADDs) in vitro. Silences hippocampal neurons expressing hM<sub>4</sub> DREADDs in vitro. Activates G<sub>s</sub>-linked DREADDs- AgRP in mice via intracerebroventricular (i.c.v) injection. Shown to be a P-glycoprotein (P-gp) efflux pump substrate. Other potent and selective hM<sub>3</sub>Dq DREADD agonists available: DREADD agonist 21 and Perlapine. Water soluble salt also available. This product contains 1 molar equivalent of ethanol. Please see product datasheet on www.tocris.com for full description.

**Physical and Chemical Properties:**

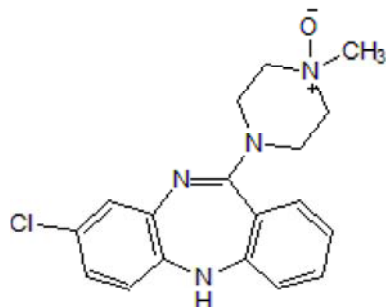
Batch Molecular Formula: C<sub>18</sub>H<sub>19</sub>ClN<sub>4</sub>O.2H<sub>2</sub>O

Batch Molecular Weight: 378.85

Physical Appearance: Yellow solid

**Minimum Purity:** >99%

**Batch Molecular Structure:**



**Storage:** Store at RT

**Solubility & Usage Info:**

DMSO to 20 mM

ethanol to 10 mM with gentle warming

**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.

**References:**

**Gomez et al (2017)** Chemogenetics revealed: DREADD occupancy and activation via converted clozapine. *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.

**Zaman et al (2014)** LMO4 is essential for paraventricular hypothalamic neuronal activity and calcium channel expression to prevent hyperphagia. *J.Neurosci.* **34** 140. PMID: 24381275.

**Armbruster et al (2007)** Evolving the lock to fit the key to create a family of G protein-coupled receptors potently activated by an inert ligand. *Proc.Natl.Acad.Sci.U.S.A.* **104** 5163. PMID: 17360345.

**Eiermann et al (1997)** The involvement of CYP1A2 and CYP3A4 in the metabolism of clozapine. *Br.J.Clin.Pharmacol.* **44** 439. PMID: 9384460.

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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