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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

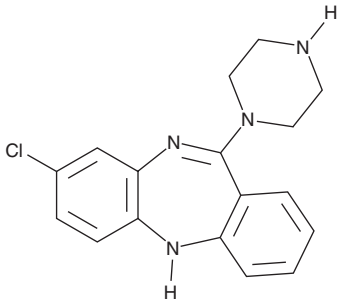
linkedin.com/company/szaboscandic

PRODUCT INFORMATION

N-Desmethylclozapine

Item No. 26153

CAS Registry No.:	6104-71-8
Formal Name:	8-chloro-11-(1-piperazinyl)-5H-dibenzo[b,e][1,4]diazepine
Synonym:	Norclozapine
MF:	$C_{17}H_{17}ClN_4$
FW:	312.8
Purity:	≥98%
UV/Vis.:	λ_{max}: 215, 226, 262, 296 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years



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

Laboratory Procedures

N-Desmethylclozapine is supplied as a crystalline solid. A stock solution may be made by dissolving the N-desmethylclozapine in the solvent of choice. N-Desmethylclozapine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of N-desmethylclozapine in ethanol is approximately 5 mg/ml and approximately 10 mg/ml in DMSO and DMF.

N-Desmethylclozapine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, N-desmethylclozapine should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. N-Desmethylclozapine has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

N-Desmethylclozapine is an active metabolite of the atypical antipsychotic clozapine (Item Nos. 12059 | 25779).[1] It was originally described as an antagonist of serotonin (5-HT) receptor subtype 5-HT_{2C} (IC_{50} = 7.1 nM in rat choroid plexus) and later as an inverse agonist using human recombinant receptors.[2,3] N-Desmethylclozapine is an antagonist at dopamine D_4 receptors, an agonist at δ-opioid receptors, and a partial agonist at dopamine D_2 and D_3, M_1 muscarinic acetylcholine, and 5-HT_{1A} receptors.[1,3,4] N-Desmethylclozapine (30 mg/kg) decreases exploratory locomotor activity and increases prepulse inhibition of the acoustic startle response in mice.[5]

References

1. Burstein, E.S., Ma, J., Wong, S., *et al.* Intrinsic efficacy of antipsychotics at human D_2, D_3, and D_4 dopamine receptors: Identification of the clozapine metabolite N-desmethylclozapine as a D_2/D_3 partial agonist. *J. Pharmacol. Exp. Ther.* **315(3)**, 1278-1287 (2005).
2. Kuoppamäki, M., Syvälahti, E., and Hietala, J. Clozapine and N-desmethylclozapine are potent 5-HT_{1C} receptor antagonists. *Eur. J. Pharmacol.* **245(2)**, 179-182 (1993).
3. Lameh, J., Burstein, E.S., Taylor, E., *et al.* Pharmacology of N-desmethylclozapine. *Pharmacol. Ther.* **115(2)**, 223-231 (2007).
4. Odagaki, Y., Kinoshita, M., and Ota, T. Comparative analysis of pharmacological properties of xanomeline and N-desmethylclozapine in rat brain membranes. *J. Psychopharmacol.* **30(9)**, 896-912 (2016).
5. Maehara, S., Hikichi, H., and Ohta, H. Behavioral effects of N-desmethylclozapine on locomotor activity and sensorimotor gating function in mice-Possible involvement of muscarinic receptors. *Brain Res.* **1418**, 111-119 (2011).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM