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SZABO-SCANDIC Handels GmbH

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

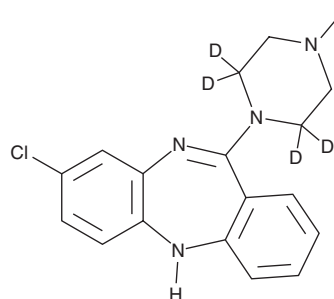
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PRODUCT INFORMATION



Clozapine-d₄ Item No. 17513

CAS Registry No.: 204395-52-8
Formal Name: 8-chloro-11-(4-methyl-1-piperazinyl-d₄)-5H-dibenzo[b,e][1,4]diazepine
MF: C₁₈H₁₅D₄ClN₄
FW: 330.9
Chemical Purity: ≥98% Clozapine
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
UV/Vis.: λ_{max}: 212, 228, 258 nm
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Clozapine-d₄ is intended for use as an internal standard for the quantification of Clozapine (Item Nos. 12059 | 25779) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Clozapine-d₄ is supplied as a solution in ethanol. To change the solvent, simply evaporate the clozapine-d₄ under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide (DMF) purged with an inert gas can be used. The solubility of clozapine-d₄ in ethanol is approximately 5 mg/ml and approximately 10 mg/ml in DMSO and DMF.

Description

Clozapine is a partial agonist at the serotonin (5-HT) receptor subtype 5-HT_{1A} (K_i = 180 nM).^{1,2} It also binds to 5-HT_{2A}, 5-HT_{2C}, 5-HT₃, 5-HT₆ and 5-HT₇ receptors (K_is = 3.3, 13, 110, 4, and 21 nM, respectively), as well as the histamine H₁ and α₁-adrenergic receptors (K_is = 2.1 and 23 nM, respectively). It does not bind to the 5-HT_{1B} receptor and has a lower affinity for dopamine receptors (K_is = 540, 150, and 360 nM for D₁₋₃, respectively). Clozapine induces the release of glutamate and D-serine, an agonist at the glycine site of the NMDA receptor, from astrocytes, and reduces the expression of astrocytic glutamate transporters.³ It reverses locomotor hyperactivity and deficits in prepulse inhibition of acoustic startle in a rat neonatal ventral hippocampal ibotenic lesion model of schizophrenia when administered at a dose of 2.5 mg/kg per day.⁴ Formulations containing clozapine have been used in the treatment of schizophrenia.

References

1. Millan, M.J. *J. Pharmacol. Exp. Ther.* **295**(3), 853-861 (2000).
2. Schotte, A., Janssen, P.F., Gommeren, W., et al. *Psychopharmacology (Berl)* **124**(1-2), 57-73 (1996).
3. Tanahashi, S., Yamamura, S., Nakagawa, M., et al. *Br. J. Pharmacol.* **165**, 1543-1555 (2012).
4. Rueter, L.E., Ballard, M.E., Gallagher, K.B., et al. *Psychopharmacology (Berl)* **176**(3-4), 312-319 (2004).

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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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