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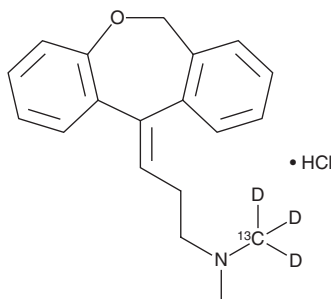
PRODUCT INFORMATION



Doxepin-¹³C-d₃ (hydrochloride)

Item No. 30121

Formal Name: (E)-3-(dibenzo[b,e]oxepin-11(6H)-ylidene)-N-methyl-N-(methyl-¹³C-d₃)propan-1-amine, monohydrochloride
MF: C₁₈[¹³C]H₁₈D₃NO • HCl
FW: 319.9
Chemical Purity: ≥98% (Doxepin)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
Supplied as: A 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

Doxepin-¹³C-d₃ (hydrochloride) is intended for use as an internal standard for the quantification of doxepin (Item No. 15888) 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).

Doxepin-¹³C-d₃ (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the doxepin-¹³C-d₃ (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Doxepin-¹³C-d₃ (hydrochloride) is soluble in methanol and DMSO.

Description

Doxepin is a tricyclic antidepressant that binds to the serotonin (5-HT) transporter (SERT) and norepinephrine transporter (NET; K_ds = 68 and 29.5 nM, respectively).¹ It is a histamine H₁ receptor antagonist (K_i = 1.23 nM).² Doxepin selectively binds to SERT and NET over the dopamine transporter (DAT; K_d = 12,100 nM) and inhibits histamine H₁ over H₂, H₃, and H₄ receptors (K_is = 170, 39,810, and 15,135 nM, respectively).^{1,2} It also binds to the 5-HT₂ receptor, as well as to muscarinic acetylcholine and α₁-adrenergic receptors (α₁-ARs; K_ds = 27, 23, and 23.5 nM, respectively).³ Doxepin (10 mg/kg, i.p.) decreases allodynia and hyperalgesia in a mouse model of chronic constriction injury-induced neuropathic pain.⁴ It increases the distance traveled in the center of the open field test and reduces immobility time in the forced swim test in a mouse model of depression induced by chronic stress when administered orally at a dose of 15 mg/kg.⁵ Formulations containing doxepin have been used in the treatment of depression and insomnia.

References

1. Tatsumi, M., Groshan, K., Blakely, R.D., et al. *Eur. J. Pharmacol.* **340(2-3)**, 249-258 (1997).
2. Appl, H., Holzammer, T., Dove, S., et al. *Maunyn-Schmiedeberg's Arch. Pharmacol.* **385(2)**, 145-170 (2012).
3. Cusack, B., Nelson, A., and Richelson, E. *Psychopharmacology (Berl.)* **114(4)**, 559-565 (1994).
4. Mika, J., Jurga, A.M., Starnowska, J., et al. *Neuroscience* **294**, 38-50 (2015).
5. Kim, Y.R., Park, B.-K., Kim, Y.H., et al. *BioMed. Res. Int.* **8249563** (2018).

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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