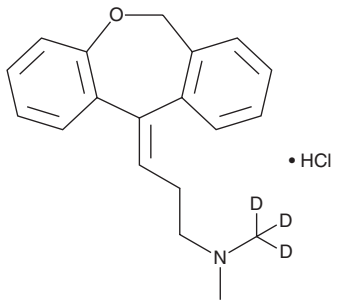
PRODUCT INFORMATION

Doxepin-d_3 (hydrochloride)

Item No. 30121

CAS Registry No.:	347840-07-7
Formal Name:	3-dibenz[b,e]oxepin-11(6H)-ylidene-N-methyl-N-(methyl-d_3)-1-propanamine, monohydrochloride
MF:	$C_{19}H_{18}D_3NO \bullet HCl$
FW:	318.9
Chemical Purity:	≥98% (Doxepin)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_3); ≤1% d_0
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

Doxepin-d_3 (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-d_3 (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the doxepin-d_3 (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Doxepin-d_3 (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 H_1 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 H_1 over H_2, H_3, and H_4 receptors (K_is = 170, 39,810, and 15,135 nM, respectively).[1,2] It also binds to the 5-HT_2 receptor, as well as to muscarinic acetylcholine and α_1-adrenergic receptors (α_1-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).

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