5-Hydroxymethyl Tolterodine-d_{14} formate

Cat. No.: HY-76570S1

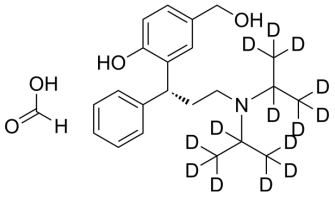
Molecular Formula: $C_{23}H_{19}D_{14}NO_4$

Molecular Weight: 401.6

Target: mAChR; Isotope-Labeled Compounds

Pathway: GPCR/G Protein; Neuronal Signaling; Others

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	5-Hydroxymethyl Tolterodine-d_{14} (formate) is deuterium labeled (Rac)-5-Hydroxymethyl Tolterodine. (Rac)-5-Hydroxymethyl Tolterodine ((Rac)-Desfesoterodine), an active metabolite of Tolterodine, is a mAChR antagonist (Ki values of 2.3 nM, 2 nM, 2.5 nM, 2.8 nM, and 2.9 nM for M1, M2, M3, M4, and M5 receptors, respectively). (Rac)-5-Hydroxymethyl Tolterodine can be used for overactive bladder research[1].			
IC_{50} & Target	mAChR1	mAChR3	mAChR4	mAChR5
In Vitro	Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.			

REFERENCES

[1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019;53(2):211-216.

[2]. B Malhotra, et al. The design and development of fesoterodine as a prodrug of 5-hydroxymethyl tolterodine (5-HMT), the active metabolite of tolterodine. Curr Med Chem. 2009;16(33):4481-9.

[3]. L Nilvebrant, et al. Antimuscarinic potency and bladder selectivity of PNU-200577, a major metabolite of tolterodine. Pharmacol Toxicol. 1997 Oct;81(4):169-72.

[4]. Shizuo Yamada, et al. Muscarinic receptor binding of fesoterodine, 5-hydroxymethyl tolterodine, and tolterodine in rat tissues after the oral, intravenous, or intravesical administration. J Pharmacol Sci. 2019 May;140(1):73-78.

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