Ipratropium-d7 bromide

Cat. No.: HY-B0241S1

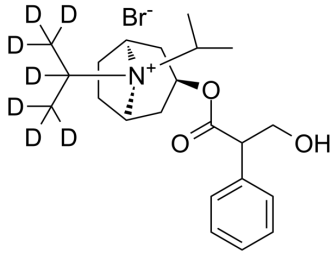
Molecular Formula: $C_{22}H_{27}D_7BrNO_3$

Molecular Weight: 447.46

Target: mAChR

Pathway: GPCR/G Protein; Neuronal Signaling

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



BIOLOGICAL ACTIVITY

Description	Ipratropium-d7 (Sch 1000-d7) bromideis the deuterium labeled Ipratropium bromide. Ipratropium bromide (Sch 1000) is a muscarinic receptor antagonist, with binding IC_{50} values of 2.9 nM, 2 nM, and 1.7 nM for M1, M2, and M3 receptors, respectively. Ipratropium bromide can be used in the research for COPD (chronic obstructive pulmonary disease) and asthma[1][2][3].
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]. Fryer, A.D. and J. Maclagan, Ipratropium bromide potentiates bronchoconstriction induced by vagal nerve stimulation in the guinea-pig. Eur J Pharmacol, 1987. 139(2): p. 187-91.

[3]. Harvey, K.L., A. Hussain, and H.L. Maddock, Ipratropium Bromide-Mediated Myocardial Injury in In Vitro Models of Myocardial Ischaemia/Reperfusion. Toxicol Sci, 2014.

[4]. Maria Prat, et al. Discovery of novel quaternary ammonium derivatives of (3R)-quinuclidinyl amides as potent and long acting muscarinic antagonists. Bioorg Med Chem Lett. 2015 Apr 15;25(8):1736-1741.

[5]. Wenhui Zhang, et al. Anti-inflammatory effects of formoterol and ipratropium bromide against acute cadmium-induced pulmonary inflammation in rats. Eur J Pharmacol. 2010 Feb 25;628(1-3):171-8.

Caution: Product has not been fully validated for medical applications. For research use only.

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