Umeclidinium-d_{10} bromide

Cat. No.: HY-12100S1

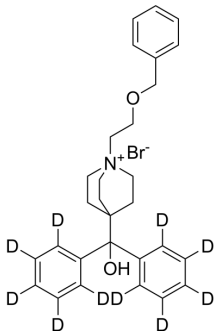
Molecular Formula: $C_{29}H_{24}D_{10}BrNO_2$

Molecular Weight: 518.55

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	Umeclidinium-d_{10} (bromide) is the deuterium labeled Umeclidinium bromide. Umeclidinium bromide is a novel mAChR antagonist. The affinity (Ki) of Umeclidinium bromide for the cloned human M1-M5 mAChRs ranges from 0.05 to 0.16 nM.	
IC_{50} & Target	mAChR1	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]. Salmon M, et al. Pharmacological characterization of GSK573719 (umeclidinium): a novel, long-acting, inhaled antagonist of the muscarinic cholinergic receptors for treatment of pulmonary diseases. J Pharmacol Exp Ther. 2013 May;345(2):260-70.

[3]. Cazzola M, et al. Pharmacology and therapeutics of bronchodilators. Pharmacol Rev. 2012 Jul;64(3):450-504.

[4]. Calzetta L, et al. Pharmacological characterization of the interaction between umeclidinium and vilanterol in human bronchi. Eur J Pharmacol. 2017 Jul 14. pii: S0014-2999(17)30470-3.

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