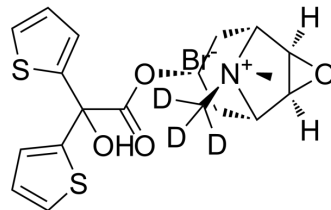


## Tiotropium-d<sub>3</sub> bromide

|                           |   |
|---------------------------|---|
| <b>Cat. No.:</b>          | HY-17360S   |
| <b>CAS No.:</b>           | 1127226-56-5  |
| <b>Molecular Formula:</b> | C <sub>19</sub> H <sub>19</sub> D <sub>3</sub> BrNO <sub>4</sub> S <sub>2</sub>           |
| <b>Molecular Weight:</b>  | 475.43  |
| <b>Target:</b>            | mAChR; Isotope-Labeled Compounds  |
| <b>Pathway:</b>           | GPCR/G Protein; Neuronal Signaling; Others  |
| <b>Storage:</b>           | Please store the product under the recommended conditions in the Certificate of Analysis. |



### BIOLOGICAL ACTIVITY

|                    |  |
|--------------------|--|
| <b>Description</b> | Tiotropium-d <sub>3</sub> (bromide) is the deuterium labeled Tiotropium (Bromide). Tiotropium Bromide (BA679 BR) is a muscarinic acetylcholine receptor (mAChR) antagonist that blocks the binding of the acetylcholine ligand and subsequent opening of the ligand-gated ion channel.   |
| <b>In Vitro</b>    | 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 <sup>[1]</sup> .<br>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]. Barnes PJ. Tiotropium bromide. *Expert Opin Investig Drugs.* 2001 Apr;10(4):733-40.;ZuWallack AR, ZuWallack RL. Tiotropium bromide, a new, once-daily inhaled anticholinergic bronchodilator for chronic-obstructive pulmonary disease. *Expert Opin Pharmacother.* 2004 Aug;5(8):1827-35.;Lipson DA. Tiotropium bromide. *Int J Chron Obstruct Pulmon Dis.* 2006;1(2):107-14.;Mamary AJ, Criner GJ. Tiotropium bromide for chronic obstructive pulmonary disease. *Expert Rev Respir Med.* 2009 Jun;3(3):211-20.;Szmidi M. [The influence of treatment with formoterol, formoterol with tiotropium, formoterol with inhaled glucocorticosteroid and tiotropium on lung functions, tolerance of exercise and simple, morning everyday activities in patients with chronic obstructive pulmonary disease (COPD)]. *Pneumonol Alergol Pol.* 2012;80(3):255-62.

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

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