Bromhexine-d_3 hydrochloride

Cat. No.: HY-B0372AS

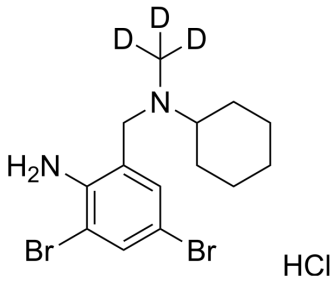
Molecular Formula: $C_{14}H_{18}D_3Br_2ClN_2$

Molecular Weight: 415.61

Target: Autophagy; SARS-CoV; HIV; Isotope-Labeled Compounds

Pathway: Autophagy; Anti-infection; Others

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 20 mg/mL (48.12 mM; Need ultrasonic)
H2O : 3.33 mg/mL (8.01 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.4061 mL	12.0305 mL	24.0610 mL
5 mM	0.4812 mL	2.4061 mL	4.8122 mL
10 mM	0.2406 mL	1.2031 mL	2.4061 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Bromhexine-d_3 (hydrochloride) is deuterium labeled Bromhexine (hydrochloride). Bromhexine hydrochloride is a potent and specific TMPRSS2 protease inhibitor with an IC50 of 0.75 μM. Bromhexine hydrochloride can prevent and manage SARS-CoV-2 infection. Bromhexine hydrochloride is an autophagy agonist. Bromhexine hydrochloride is a mucolytic cough suppressant and has the potential for a range of respiratory conditions[1][2][3][4].

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]. Jared M Lucas, et al. The androgen-regulated protease TMPRSS2 activates a proteolytic cascade involving components of the tumor microenvironment and promotes

prostate cancer metastasis. Cancer Discov. 2014 Nov;4(11):1310-25.

[3]. Li Wen Shen, et al. TMPRSS2: A potential target for treatment of influenza virus and coronavirus infections. Biochimie. 2017 Nov;142:1-10.

[4]. Roberto Maggio, et al. Repurposing the mucolytic cough suppressant and TMPRSS2 protease inhibitor bromhexine for the prevention and management of SARS-CoV-2 infection. Pharmacol Res. 2020 Jul;157:104837.

[5]. Santosh Chauhan, et al. Pharmaceutical screen identifies novel target processes for activation of autophagy with a broad translational potential. Nat Commun. 2015 Oct 27;6:8620.

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