Promethazine-d_4 hydrochloride

Cat. No.: HY-B0781S

CAS No.: 1173018-74-0

Molecular Formula: $C_{17}H_{17}D_4ClN_2S$

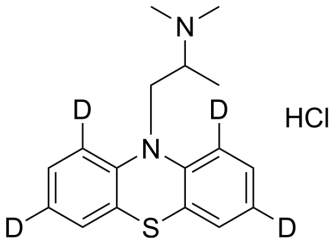
Molecular Weight: 324.9

Target: Histamine Receptor

Pathway: GPCR/G Protein; Immunology/Inflammation; Neuronal Signaling

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

H2O : 100 mg/mL (307.79 mM; Need ultrasonic)

DMSO : 50 mg/mL (153.89 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.0779 mL	15.3894 mL	30.7787 mL
5 mM	0.6156 mL	3.0779 mL	6.1557 mL
10 mM	0.3078 mL	1.5389 mL	3.0779 mL

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

BIOLOGICAL ACTIVITY

Description

Promethazine-d_4 (hydrochloride) is the deuterium labeled Promethazine hydrochloride. Promethazine hydrochloride is the first-generation antihistamine; strong antagonist of the H1 receptor and moderate mACh receptor antagonist, moderate affinity for 5-HT2A, 5-HT2C, D2 and α1-adrenergic receptors.

IC_{50} & Target

H_1 Receptor

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]. Strenkoski-Nix LC, et al. Pharmacokinetics of promethazine hydrochloride after administration of rectal suppositories and oral syrup to healthy subjects. Am J Health Syst Pharm. 2000 Aug 15;57(16):1499-505.

[3]. Fiorella D, et al. The role of the 5-HT2A and 5-HT2C receptors in the stimulus effects of hallucinogenic drugs. I: Antagonist correlation analysis. Psychopharmacology (Berl). 1995 Oct;121(3):347-56.

[4]. Seeman P, et al. Dopamine D2 receptor binding sites for agonists. A tetrahedral model. Mol Pharmacol. 1985 Nov;28(5):391-9.

[5]. Burt DR, et al. Antischizophrenic drugs: chronic treatment elevates dopamine receptor binding in brain. Science. 1977 Apr 15;196(4287):326-8.

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