Enoxacin-d_8 hydrochloride

Cat. No.: HY-B0268S1

Molecular Formula: $C_{15}H_{10}D_8ClFN_4O_3$

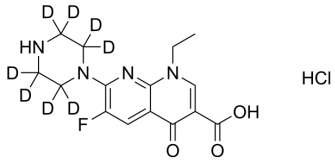
Molecular Weight: 364.83

Target: MicroRNA; Bacterial; DNA/RNA Synthesis; Antibiotic; Isotope-Labeled Compounds

Pathway: Epigenetics; Anti-infection; Cell Cycle/DNA Damage; 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 : ≥ 15 mg/mL (41.12 mM)

PBS (pH 7.2) : ≥ 10 mg/mL (27.41 mM)

DMF : ≥ 0.1 mg/mL (0.27 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	2.7410 mL	13.7050 mL	27.4100 mL
5 mM	0.5482 mL	2.7410 mL	5.4820 mL
10 mM	0.2741 mL	1.3705 mL	2.7410 mL

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

BIOLOGICAL ACTIVITY

Description

Enoxacin-d_8 (hydrochloride) is deuterium labeled Enoxacin. Enoxacin (AT 2266), a fluoroquinolone, interferes with DNA replication and inhibits bacterial DNA gyrase (IC50=126 μg/ml) and topoisomerase IV (IC50=26.5 μg/ml). Enoxacin is a miRNA processing activator and enhances siRNA-mediated mRNA degradation and promotes the biogenesis of endogenous miRNAs. Enoxacin has potent activities against gram-positive and -negative bacteria. Enoxacin is a cancer-specific growth inhibitor that acts by enhancing TAR RNA-binding protein 2 (TRBP)-mediated microRNA processing[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]. Chin, N.-X. and H.C. Neu, In vitro activity of enoxacin, a quinolone carboxylic acid, compared with those of norfloxacin, new beta-lactams, aminoglycosides, and trimethoprim. Antimicrobial agents and chemotherapy, 1983. 24(5): p. 754-763.

[3]. Ge Shan, et al. A small molecule enhances RNA interference and promotes microRNA processing. Nat Biotechnol. 2008 Aug;26(8):933-40.

[4]. M Takei, et al. Target preference of 15 quinolones against Staphylococcus aureus, based on antibacterial activities and target inhibition. Antimicrob Agents Chemother. 2001 Dec;45(12):3544-7.

[5]. Rengen Fan, et al. Small molecules with big roles in microRNA chemical biology and microRNA-targeted therapeutics. RNA Biol. 2019 Jun;16(6):707-718.

[6]. Sonia Melo, et al.Small molecule enoxacin is a cancer-specific growth inhibitor that acts by enhancing TAR RNA-binding protein 2-mediated microRNA processing. Proc Natl Acad Sci U S A. 2011 Mar 15;108(11):4394-9.

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