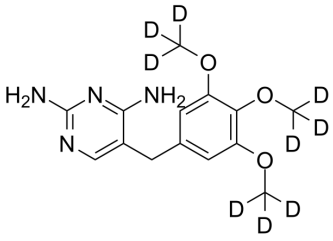
Trimethoprim-d_9

Cat. No.:	HY-B0510S
CAS No.:	1189460-62-5
Molecular Formula:	$C_{14}H_9D_9N_4O_3$
Molecular Weight:	299.37
Target:	Antifolate; Bacterial; Antibiotic
Pathway:	Cell Cycle/DNA Damage; Anti-infection
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (334.03 mM; Need ultrasonic)
DMSO : 50 mg/mL (167.02 mM; Need ultrasonic)
H2O : 0.67 mg/mL (2.24 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.3403 mL	16.7017 mL	33.4035 mL
5 mM	0.6681 mL	3.3403 mL	6.6807 mL
10 mM	0.3340 mL	1.6702 mL	3.3403 mL

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

BIOLOGICAL ACTIVITY

Description

Trimethoprim-d_9 is the deuterium labeled Trimethoprim. Trimethoprim is a bacteriostatic antibiotic and an orally active dihydrofolate reductase inhibitor. Trimethoprim is active against a wide range of Gram-positive and Gram-negative aerobic bacteria. Trimethoprim has the potential for urinary tract infections, Shigellosis and Pneumocystis pneumonia treatment[1][2][3].

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]. Xiaojian Wang, et al. A Trimethoprim Conjugate of Thiomaltose Has Enhanced Antibacterial Efficacy In Vivo. Bioconjug Chem. 2018 May 16;29(5):1729-1735.

[3]. Laskowska, E., et al., Trimethoprim induces heat shock proteins and protein aggregation in E. coli cells. Curr Microbiol, 2003. 47(4): p. 286-9.

[4]. Brogden, R.N., et al., Trimethoprim: a review of its antibacterial activity, pharmacokinetics and therapeutic use in urinary tract infections. Drugs, 1982. 23(6): p. 405-30.

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