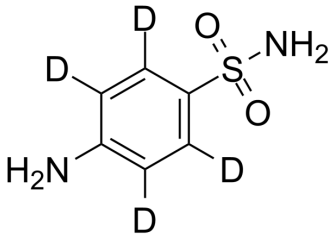
Sulfanilamide-d_4

Cat. No.:	HY-B0242S1
CAS No.:	77435-46-2
Molecular Formula:	$C_6H_4D_4N_2O_2S$
Molecular Weight:	176.23
Target:	Bacterial; Antibiotic
Pathway:	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 (567.44 mM; Need ultrasonic)
H2O : 10 mg/mL (56.74 mM; Need ultrasonic)

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	5.6744 mL	28.3720 mL	56.7440 mL
5 mM	1.1349 mL	5.6744 mL	11.3488 mL
10 mM	0.5674 mL	2.8372 mL	5.6744 mL

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

BIOLOGICAL ACTIVITY

Description

Sulfanilamide-d_4 is the deuterium labeled Sulfanilamide. Sulfanilamide is a competitive inhibitor for bacterial enzyme dihydropteroate synthetase with IC50 of 320 μM.

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]. McCullough, J.L. and T.H. Maren, Inhibition of dihydropteroate synthetase from Escherichia coli by sulfones and sulfonamides. Antimicrob Agents Chemother, 1973.

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[3]. Meneau, I., et al., Pneumocystis jiroveci dihydropteroate synthase polymorphisms confer resistance to sulfadoxine and sulfanilamide in Saccharomyces cerevisiae. Antimicrob Agents Chemother, 2004. 48(7): p. 2610-6.

[4]. Hughes, W.T. and J. Killmar, Monodrug efficacies of sulfonamides in prophylaxis for Pneumocystis carinii pneumonia. Antimicrob Agents Chemother, 1996. 40(4): p. 962-5.

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