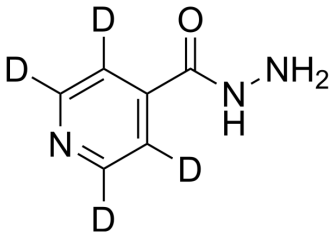
Isoniazid-d_4

Cat. No.:	HY-B0329S
CAS No.:	774596-24-6
Molecular Formula:	$C_6H_3D_4N_3O$
Molecular Weight:	141.16
Target:	Bacterial; Autophagy; Mitophagy; Antibiotic
Pathway:	Anti-infection; Autophagy
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 : 50 mg/mL (354.21 mM; Need ultrasonic)
H2O : 33.33 mg/mL (236.12 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	7.0842 mL	35.4208 mL	70.8416 mL
5 mM	1.4168 mL	7.0842 mL	14.1683 mL
10 mM	0.7084 mL	3.5421 mL	7.0842 mL

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

BIOLOGICAL ACTIVITY

Description

Isoniazid-d_4 is the deuterium labeled Isoniazid. Isoniazid (INH) is a proagent and must be activated by a bacterial catalase-peroxidase enzyme KatG. Isoniazid is bactericidal to rapidly dividing mycobacteria and has anti-tuberculostatic activity[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]. Suarez, J., et al., An oxyferrous heme/protein-based radical intermediate is catalytically competent in the catalase reaction of Mycobacterium tuberculosis catalase-peroxidase (KatG). J Biol Chem, 2009. 284(11): p. 7017-29.

[3]. Timmins, G.S., et al., Nitric oxide generated from isoniazid activation by KatG: source of nitric oxide and activity against Mycobacterium tuberculosis. Antimicrob Agents Chemother, 2004. 48(8): p. 3006-9.

[4]. Singh, R., et al., PA-824 kills nonreplicating Mycobacterium tuberculosis by intracellular NO release. Science, 2008. 322(5906): p. 1392-5.

[5]. Ahmad, Z., et al., Biphasic kill curve of isoniazid reveals the presence of drug-tolerant, not drug-resistant, Mycobacterium tuberculosis in the guinea pig. J Infect Dis, 2009. 200(7): p. 1136-43.

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