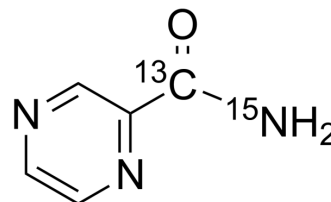


Pyrazinamide-¹³C,¹⁵N

Cat. No.:	HY-B0271S1
Molecular Formula:	C ₄ ¹³ CH ₅ N ₂ ¹⁵ NO
Molecular Weight:	125.1
Target:	Autophagy; Antibiotic; Bacterial; Isotope-Labeled Compounds
Pathway:	Autophagy; Anti-infection; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Pyrazinamide- ¹³ C, ¹⁵ N is ¹⁵ N and ¹³ C labeled Pyrazinamide (HY-B0271). Pyrazinamide (Pyrazinecarboxamide; Pyrazinoic acid amide) is a potent and orally active antitubercular antibiotic. Pyrazinamide is a proagent that is converted to the active form pyrazinoic acid (POA) by PZase/nicotinamidase encoded by the pncA gene in <i>M. tuberculosis</i> .
In Vitro	<p>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].</p> <p>Pyrazinamide exhibits remarkable activity in vivo activity, has no activity against growing <i>Mycobacterium tuberculosis</i> except at an acidic pH. In <i>M. tuberculosis</i>, acidic pH enhances the intracellular accumulation of pyrazinoic acid (POA), the active derivative of PZA.</p> <p>POA is thought to disrupt membrane energetics and inhibit membrane transport function at acid pH in <i>Mycobacterium tuberculosis</i>^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

REFERENCES

- [1]. Y Zhang, et al. Role of acid pH and deficient efflux of pyrazinoic acid in unique susceptibility of *Mycobacterium tuberculosis* to pyrazinamide. *J Bacteriol.* 1999 Apr;181(7):2044-9.
- [2]. Ying Zhang, et al. Mechanisms of Pyrazinamide Action and Resistance. *Microbiol Spectr.* 2014 Aug;2(4):MGM2-0023-2013.
- [3]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother.* 2019 Feb;53(2):211-216.

Caution: Product has not been fully validated for medical applications. For research use only.

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