Pyrazinamide

Cat. No.: HY-B0271

CAS No.: 98-96-4

Molecular Formula: $C_5H_5N_3O$

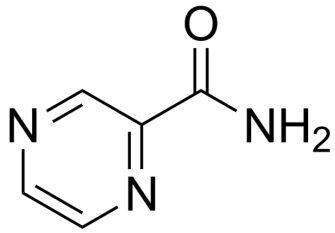
Molecular Weight: 123.11

Target: Bacterial; Autophagy; Antibiotic

Pathway: Anti-infection; Autophagy

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 50 mg/mL (406.14 mM)

H_2O : 6.67 mg/mL (54.18 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	8.1228 mL	40.6141 mL	81.2282 mL
	5 mM	1.6246 mL	8.1228 mL	16.2456 mL
	10 mM	0.8123 mL	4.0614 mL	8.1228 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 27.5 mg/mL (223.38 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (20.31 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (20.31 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (20.31 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

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 M. tuberculosis.

IC_{50} & Target	IC50: Mycobacterium tuberculosis[1]
In Vitro	Pyrazinamide exhibits remarkable activity in vivo activity, has no activity against growing Mycobacterium tuberculosis except at an acidic pH. In M. tuberculosis, acidic pH enhances the intracellular accumulation of pyrazinoic acid (POA), the active derivative of PZA. POA is thought to disrupt membrane energetics and inhibit membrane transport function at acid pH in?Mycobacterium tuberculosis[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- ACS Chem Biol. 2021 Dec 15.

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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.

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