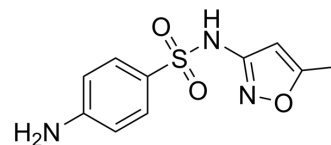


Sulfamethoxazole

Cat. No.:	HY-B0322		
CAS No.:	723-46-6		
Molecular Formula:	C ₁₀ H ₁₁ N ₃ O ₃ S		
Molecular Weight:	253.28		
Target:	Bacterial; Antibiotic		
Pathway:	Anti-infection		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	1 year
		-20°C	6 months



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (394.82 mM)
 H₂O : < 0.1 mg/mL (insoluble)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.9482 mL	19.7410 mL	39.4820 mL
	5 mM	0.7896 mL	3.9482 mL	7.8964 mL
	10 mM	0.3948 mL	1.9741 mL	3.9482 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 2.5 mg/mL (9.87 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 2.5 mg/mL (9.87 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Sulfamethoxazole (Ro 4-2130) is a sulfonamide bacteriostatic antibiotic, used for bacterial infections. Sulfonamides is a competitive antagonists of para-aminobenzoic acid (PABA)^[1].

IC₅₀ & Target

Antibacterial

In Vitro

Sulfonamides are structural analogs and competitive antagonists of para-aminobenzoic acid (PABA). They inhibit normal bacterial utilization of PABA for the synthesis of folic acid, an important metabolite in DNA synthesis. The effects seen are usually bacteriostatic in nature. Folic acid is not synthesized in humans, but is instead a dietary requirement. This allows for

the selective toxicity to bacterial cells (or any cell dependent on synthesizing folic acid) over human cells. Bacterial resistance to sulfamethoxazole is caused by mutations in the enzymes involved in folic acid synthesis that prevent the drug from binding to it.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Signal Transduct Target Ther. 2023 Sep 18;8(1):353.
- Nat Commun. 2022 Mar 2;13(1):1116.
- Autophagy. 2023 Jun 13;1-17.
- Water Res. 2023 May 21, 120110.
- Clin Chem. 2019 Dec;65(12):1522-1531.

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REFERENCES

[1]. Straub JO, et al. Aquatic environmental risk assessment for human use of the old antibiotic sulfamethoxazole in Europe. Environ Toxicol Chem. 2016 Apr;35(4):767-79.

[2]. Zambuzzi-Carvalho et al. Transcriptional profile of the human pathogenic fungus *Paracoccidioides lutzii* in response to sulfamethoxazole. Med Mycol. 2015;53(5):477-492.

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

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