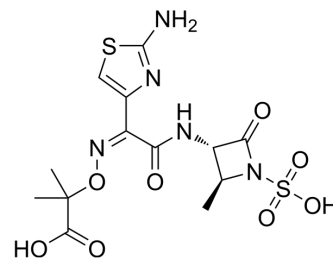


Aztreonam

Cat. No.:	HY-B0129		
CAS No.:	78110-38-0		
Molecular Formula:	C ₁₃ H ₁₇ N ₅ O ₈ S ₂		
Molecular Weight:	435.43		
Target:	Bacterial; Antibiotic; Penicillin-binding protein (PBP)		
Pathway:	Anti-infection		
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 (114.83 mM; Need ultrasonic)
 H₂O : 10 mg/mL (22.97 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent		1 mg	5 mg	10 mg
	Concentration	Mass			
	1 mM		2.2966 mL	11.4828 mL	22.9657 mL
	5 mM		0.4593 mL	2.2966 mL	4.5931 mL
	10 mM		0.2297 mL	1.1483 mL	2.2966 mL

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

In Vivo

- Add each solvent one by one: PBS
Solubility: 10 mg/mL (22.97 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (5.74 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (5.74 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (5.74 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Aztreonam (SQ-26,776) is a synthetic monocyclic beta-lactam antibiotic, which has a very high affinity for penicillin-binding protein 3 (PBP-3).

IC₅₀ & Target

β-lactam

In Vitro

Aztreonam (SQ-26,776) is a synthetic monocyclic beta-lactam antibiotic (a monobactam), with the nucleus based on a simpler monobactam isolated from *Chromobacterium violaceum*. It was approved by the U.S. Food and Drug Administration in 1986. It is resistant to some beta-lactamases, but is inactivated by extended-spectrum beta-lactamases. Aztreonam has no useful activity against gram-positive or anaerobic microorganisms^[1]. Aztreonam (SQ-26) is similar in action to penicillin. It inhibits mucopeptide synthesis in the bacterial cell wall, thereby blocking peptidoglycan crosslinking. It has a very high affinity for penicillin-binding protein 3 (PBP-3) and mild affinity for PBP-1a. Aztreonam (SQ-26) binds the penicillin-binding proteins of gram-positive and anaerobic bacteria very poorly and is largely ineffective against them. Aztreonam (SQ-26) is bactericidal but less so than some of the cephalosporins^[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell. 2024 Feb 15;187(4):882-896.e17
- Nat Commun. 2022 Mar 2;13(1):1116.
- Pharmaceutics. 2023 Nov 30, 15(12), 2705.
- Antimicrob Agents Chemother. 2018 Jul 27;62(8). pii: e00414-18.
- Antibiotics (Basel). 2021, 10(11), 1341.

See more customer validations on www.MedChemExpress.com

REFERENCES

- [1]. Kobayashi Y, et al. Synergy with aztreonam and arbekacin or tobramycin against *Pseudomonas aeruginosa* isolated from blood. *J Antimicrob Chemother.* 1992 Dec;30(6):871-2.
- [2]. Guay DR, et al. Aztreonam, a new monobactam antimicrobial. *Clin Pharm.* 1985 Sep-Oct;4(5):516-26.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA