

Cefmetazole sodium

Cat. No.: HY-B1257

CAS No.: 56796-39-5

Molecular Formula: C₁₅H₁₆N₇NaO₅S₃

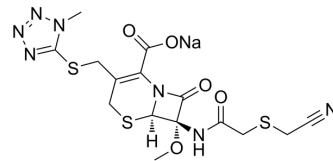
Molecular Weight: 493.52

Target: Bacterial; Antibiotic

Pathway: Anti-infection

Storage: 4°C, sealed storage, away from moisture and light

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (253.28 mM; Need ultrasonic)

H₂O : 100 mg/mL (202.63 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration	Solvent Mass		
		1 mg	5 mg	10 mg
	1 mM	2.0263 mL	10.1313 mL	20.2626 mL
	5 mM	0.4053 mL	2.0263 mL	4.0525 mL
	10 mM	0.2026 mL	1.0131 mL	2.0263 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.08 mg/mL (4.21 mM); Clear solution

2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.08 mg/mL (4.21 mM); Clear solution

3. Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.08 mg/mL (4.21 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Cefmetazole sodium (Sodium cefmetazole) is a semisynthetic cephamycin antibiotic with broad-spectrum antibacterial activity, covering gram-positive, gram-negative, and anaerobic bacteria. Cefmetazole sodium binds to penicillin binding proteins (PBPs), resulting in interfering bacterial cell wall biosynthesis. Cefmetazole sodium is used for the research of gynecologic, intraabdominal, urinary tract, respiratory tract and skin and soft tissue infections^{[1][2][3]}.

IC₅₀ & Target

β-lactam

In Vitro	Cefmetazole sodium (Sodium cefmetazole) has antibiotic affinity to <i>S. aureus</i> with a MIC value of 1.0 mg/L and has affinity for PBP1, PBP2 and PBP3 with IC ₅₀ values of ≤0.3, 0.109 and 0.494 mg/L ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.								
In Vivo	<p>Cefmetazole sodium (Sodium cefmetazole) (100 mg/kg; i.h.; twice a day, for 7 days; male ICR mice) alters gut bacterial flora [3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1"> <tr> <td>Animal Model:</td><td>Male ICR mice^[3]</td></tr> <tr> <td>Dosage:</td><td>100 mg/kg</td></tr> <tr> <td>Administration:</td><td>Subcutaneous injection; twice a day, for 7 days</td></tr> <tr> <td>Result:</td><td>Reduced Peyer's patch (PP) lymphocyte cell numbers while decreased bacterial numbers in the small intestine.</td></tr> </table>	Animal Model:	Male ICR mice ^[3]	Dosage:	100 mg/kg	Administration:	Subcutaneous injection; twice a day, for 7 days	Result:	Reduced Peyer's patch (PP) lymphocyte cell numbers while decreased bacterial numbers in the small intestine.
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Dosage:	100 mg/kg								
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Result:	Reduced Peyer's patch (PP) lymphocyte cell numbers while decreased bacterial numbers in the small intestine.								

REFERENCES

- [1]. Truesdell SE, et, al. Interaction of cephalosporins with penicillin-binding proteins of methicillin-resistant *Staphylococcus aureus*. J Antimicrob Chemother. 1989 Apr;23 Suppl D:13-9.
- [2]. Yaguchi Y, et, al. Influences of long-term antibiotic administration on Peyer's patch lymphocytes and mucosal immunoglobulin A levels in a mouse model. JPEN J Parenter Enteral Nutr. 2006 Sep-Oct;30(5):395-8; discussion 399.
- [3]. Schentag JJ, et, al. Cefmetazole sodium: pharmacology, pharmacokinetics, and clinical trials. Pharmacotherapy. 1991;11(1):2-19.

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

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