Cefepime

Cat. No.: HY-B0692

CAS No.: 88040-23-7

Molecular Formula: $C_{19}H_{24}N_6O_5S_2$

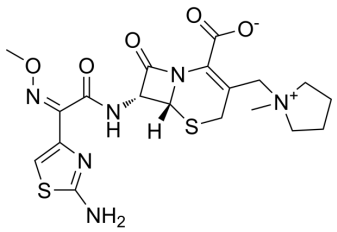
Molecular Weight: 480.56

Target: Antibiotic; Bacterial; Penicillin-binding protein (PBP)

Pathway: Anti-infection

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (260.11 mM; Need ultrasonic)

H_2O : 100 mg/mL (208.09 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.0809 mL	10.4045 mL	20.8091 mL
	5 mM	0.4162 mL	2.0809 mL	4.1618 mL
	10 mM	0.2081 mL	1.0405 mL	2.0809 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 (4.33 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.33 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.33 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Cefepime (BMY-28142) is a broad-spectrum and cross the blood-brain barrier cephalosporin. Cefepime shows antibacterial effects against both Gram-positive and Gram-negative aerobic bacteria. Cefepime induces neurotoxicity[1][2][3][4].

IC_{50} & Target

β-lactam

In Vitro

Cefepime chloride exerts its antibacterial effects by binding to penicillin-binding proteins[2].

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

In Vivo

Cefepime (80 mg/kg; i.p.) significantly increases the half-life and mice surviveed[4].

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

Animal Model:	Male CD-1 mice[4]
Dosage:	80 mg/kg
Administration:	I.p.
Result:	Significantly prolonged the half-life of cefepime and all mice survived at 18-22 mg/kg cisplatin, and when pretreatment with 26 mg/kg cisplatin significantly decreased survival with the half-life of cefepime was not significantly longer than of 18 mg/kg cisplatin.

CUSTOMER VALIDATION

- Emerg Microbes Infect. 2024 Dec;13(1):2321981.
- Pharmaceutics. 2023 Nov 30, 15(12), 2705.
- Vet Microbiol. 2024 May, 292, 110046.
- J Antibiot (Tokyo). 2023 Feb 1.
- Animal Diseases. 02 November 2021.

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REFERENCES

[1]. Yahav D, et al. Efficacy and safety of cefepime: a systematic review and meta-analysis. Lancet Infect Dis. 2007 May;7(5):338-48.

[2]. Barradell LB, Bryson HM. Cefepime. A review of its antibacterial activity, pharmacokinetic properties and therapeutic use. Drugs. 1994;47(3):471-505.

[3]. Payne LE, et al. Cefepime-induced neurotoxicity: a systematic review. Crit Care. 2017 Nov 14;21(1):276. doi: 10.1186/s13054-017-1856-1.

[4]. Máthé A, et al. The effect of different doses of cisplatin on the pharmacokinetic parameters of cefepime in mice. Lab Anim. 2006 Jul;40(3):296-300.

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