Ceftibuten dihydrate

Cat. No.: HY-B0698A

CAS No.: 118081-34-8

Molecular Formula: $C_{15}H_{18}N_4O_8S_2$

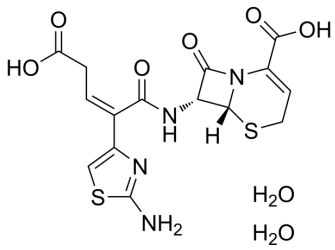
Molecular Weight: 446.46

Target: Bacterial; Antibiotic; Beta-lactamase

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 : 100 mg/mL (223.98 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.2398 mL	11.1992 mL	22.3984 mL
5 mM	0.4480 mL	2.2398 mL	4.4797 mL
10 mM	0.2240 mL	1.1199 mL	2.2398 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: ≥ 2.5 mg/mL (5.60 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.60 mM); Clear solution
3. Add each solvent one by one: PBS
   Solubility: 2.26 mg/mL (5.06 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Ceftibuten (Sch-39720) dihydrate, an antibiotic, is an orally active cephalosporin, possesses potent activity in vitro against a wide range of gram-negative and certain gram-positive pathogens[1][2].

IC_{50} & Target

β-lactam

In Vitro

Ceftibuten (Sch-39720) is highly active against Haemophilus influenza, Escherichia coli, Klebsiella sp., and Proteus sp. and moderately active against Serratia sp. and Streptococcus pyogenes. Ceftibuten is relatively inactive against enterococci and

	staphylococci and is only weakly active against Pseudomonas aeruginosa and obligate anaerobes. It is also stable in the presence of most β-lactamase-producing organisms except βBacteroides fragilis. Ceftibuten is very active against strains of the family Enterobacteriaceae (mean MIC for 90% of strains=0.25 μg/ml) but less active against Campylobacterjejuni (mean MIC for 90% of strains=16.0 μg/ml)[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Ceftibuten, a biologically stableβ-lactam antibiotic, has been shown to be transported by the small peptide transport system, to have relatively high affinity for the carrier and to show clear stereoselective and proton-gradient dependent transport characteristics in rat intestinal brush-border membrane vesicles[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- SLAS Discov. 2020 Sep;25(8):895-905.

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REFERENCES

[1]. Kearns GL, et al. Single-dose pharmacokinetics of ceftibuten (SCH 39720) in infants and children. Antimicrob Agents Chemother. 1991;35(10):2078-2084.

[2]. Shawar R, et al. Comparative in vitro activity of ceftibuten (Sch 39720) against bacterial enteropathogens. Antimicrob Agents Chemother. 1989;33(5):781-784.

[3]. Tamai I, et al. Functional expression of intestinal dipeptide/beta-lactam antibiotic transporter in Xenopus laevis oocytes. Biochem Pharmacol. 1994;48(5):881-888.

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