

Product Data Sheet

Product Name: Ceftizoxime

Cat. No.: GC32229

Chemical Properties

Cas. No. 68401-81-0

SMILES O=C(C(N12)=CCS[C@]2([H])[C@H](NC(/C(C3=CSC(N)=N3)=N\OC)=O)C1=O)O

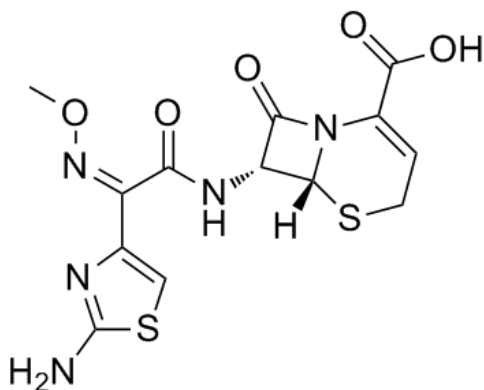
Formula $C_{13}H_{13}N_5O_5S_2$ M.Wt 383.4

Solubility DMSO : 25 mg/mL (65.21 mM) Storage 4°C, away from moisture and light

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Protocol

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

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Animal experiment: Rats[2]The animals used in this study include 6-week-old male JCL:ICR strain mice, 6-week-old male JCL:SD strain rats, 7.5- to 15.0-kg male beagle dogs, and 5.8- to 9.1-kg male rhesus monkeys. Ceftizoxime for injection is dissolved in 0.9% saline. Ceftizoxime is given in a dose of 20 mg/kg to all test animals. The volumes are: 0.25 mL per animal by the intravenous (i.v.) and subcutaneous routes to mice; 5 mL/kg of body weight by the intramuscular (i.m.) and i.v. routes to rats; and 0.5 mL/kg of body weight by the i.m. and i.v. routes to dogs and monkeys[1].

References:

- [1]. Kamimura T, et al. Ceftizoxime (Ceftizoxime), a new parenteral cephalosporin: in vitro and in vivo antibacterial activities. *Antimicrob Agents Chemother.* 1979 Nov;16(5):540-8.
- [2]. Murakawa T, et al. Pharmacokinetics of ceftizoxime in animals after parenteral dosing. *Antimicrob Agents Chemother.* 1980 Feb;17(2):157-64.

Background

Ceftizoxime is a bacterial inhibitor which acts by interfering with bacterial cell wall synthesis and inhibiting cross-linking of the peptidoglycan.

Ceftizoxime is a new parenteral cephalosporin derivative which is more active against various gram-negative bacilli, including the opportunistic pathogens such as *Enterobacter*, *Citrobacter* species, and *Serratia marcescens*, than cephalosporins and cephamycins such as cefotiam, cefamandole, cefuroxime, cefotaxime, and cefmetazole. Ceftizoxime shows a broad spectrum of antibacterial activity against aerobic gram-positive and gram-negative bacteria[1].

The therapeutic effect of Ceftizoxime in mice infected with a small inoculum size is almost the same as that of cefotaxime[1]. Ceftizoxime is stable in biological fluids such as serum, urine, and tissue homogenates, but cefotaxime is unstable in rat tissue homogenates. Binding of ceftizoxime to serum protein in all species is the lowest of all the antibiotics: 31% for humans, 17% for dogs, and 32% for rats[2].

- [1]. Kamimura T, et al. Ceftizoxime (Ceftizoxime), a new parenteral cephalosporin: in vitro and in vivo

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