Cefsulodin sodium hydrate

Cat. No.: HY-13588B

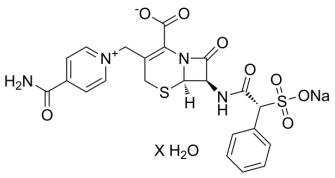
CAS No.: 1426397-23-0

Molecular Formula: $C_{22}H_{19}N_4O_8S_2.Na.XH_2O$

Target: Bacterial; Antibiotic; Bacterial

Pathway: Anti-infection

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Cefsulodin (SCE-129) sodium is a third generation β lactam antibiotic and member of the cephems subgroup of antibiotics. Cefsulodin sodium inhibits cell wall synthesis by competitively inhibiting penicillin binding protein (PBP) cross-linking and transpeptidation of peptidogly. Cefsulodin sodium is a potent tyrosine phosphatase inhibitor against mPTPB, a virulent phosphatase from Mycobacterium tuberculosis, with an IC_{50} value of 16 μM[1][2][3][4].
In Vitro	Cefsulodin sodium (0.5-64 mg/mL; 18 h) is active in minimum inhibitory concentrations (MICs) of 0.5-64 mg/mL, is about 16- to 32-fold more active than Carbenicillin (HY-B0525) against Psuedomonas aeruginosa[1]. Cefsulodin sodium (8-16 μg/mL; 4.5 h) is not hydrolyzed by the beta-lactamase induced in P. aeruginosa by growth in the presence of benzylpenicillin[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Cefsulodin sodium (1 g/kg/tag; i.p.; 5 d, 9 single doses with intervals of 12 h) shows a increasing excretion of tubule cells in the rat, as a measure of nephrotoxicity, and displays tubule toxic threshold doses of 250 mg/kg (s.c.; 12 d) with nine single doses[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. King A, et al. In vitro antibacterial activity and susceptibility of cefsulodin, an antipseudomonal cephalosporin, to beta-lactamases. Antimicrob Agents Chemother. 1980 Feb;17(2):165-9.

[2]. Gotoh N, et al. Resistance of Pseudomonas aeruginosa to cefsulodin: modification of penicillin-binding protein 3 and mapping of its chromosomal gene. J Antimicrob Chemother. 1990 Apr;25(4):513-23.

[3]. He R, et al. Cefsulodin Inspired Potent and Selective Inhibitors of mPTPB, a Virulent Phosphatase from Mycobacterium tuberculosis. ACS Med Chem Lett. 2015 Nov 3;6(12):1231-5.

[4]. Sack K, et al. Renal tolerance of imipenem/cilastatin and other beta-lactam antibiotics in rats. Infection. 1985;13 Suppl 1:S156-60.

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

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