Product Data Sheet

Product Name: Cefsulodin (sodium salt)
Cat. No.: GC11451

Chemical Properties

Cas. No.	52152-93-9		
Chemical Name	4-(aminocarbonyl)-1-[[(6R,7R)-2-carboxy-8-oxo-7-[[(2R)-2-phenyl-2-sulfoacetyl]amino]-5-thia-1-azabicyclo[4.2.0]oct-2-en-3-yl]methyl]-pyridinium inner salt, monosodium salt		
SMILES	O=C(N[C@@H]1C(N2[C@]1([H])SCC(C[N+]3=CC=C(C(N)=O)C=C3)=C2C([O-])=O)=O)[C@H](S([O-])(=O)=O)C4=CC=CC=C4.[Na+]		
Formula	$C_{22}H_{19}N_4O_8S_2$ • Na	M.Wt	554.5
Solubility	≥ 22.75mg/mL in DMSO with gentle warming	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	Cefsulodin (sodium salt)		

Background

Cefsulodin, formerly named as SCE-129, is a cephalosporin with a spectrum of antibacterial activity against Staphylococcus aureus, Pseudomonas aeruginosa, and most other gram-positive cocci [1]. Cefsulodin shows little activity against other species of Acinetobacter spp., Pseudomonas, or members of the Enterobacteriaceae [1]. Cefsulodin is a β-lactam antibiotic that involved in lysing actively-growing E. coli by specifically binding to the intermembrane proteins, penicillin-binding proteins 1a and b, whose transglycosylase and transpeptidase activities are involved in cell elongation and septation [2].

Cefsulodin was active against P. aeruginos. Cefsulodin was active against penicillinase-producing strains of S. aureus. The MICs of cefsulodin for Pseudomonas aeruginosa and its mutants Pseudomonas aeruginosa PAO4089 were 0·78 and 12· mg/l [3]. Cefsulodin

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was active in minimum inhibitory concentrations (MICs) of 0.5 to 64 μg/ml. Cefsulodin was active against P. diminuta, P. maltophilia, P. paucimobilis, and P. pseudoalcaligenes with MICs of 1-32 μg/ml. Cefsulodin was not hydrolyzed by the β-lactamase induced in P. aeruginosa by growth in the presence of benzylpenicillin and was a poor substrate for β-lactamases from Enterobacter cloacae and Proteus morganii [4].

References:

[1] Barry A L, Jones R N, Thornsberry C. Cefsulodin: antibacterial activity and tentative interpretive zone standards for the disk susceptibility test[J]. Antimicrobial agents and chemotherapy, 1981, 20(4): 525-529.
[2] Jacoby G H, Young K D. Cell cycle-independent lysis of Escherichia coli by cefsulodin, an inhibitor of penicillin-binding proteins 1a and 1b[J]. Journal of bacteriology, 1991, 173(1): 1-5.
[3] Bryan L E, Kwan S, Godfrey A J. Resistance of Pseudomonas aeruginosa mutants with altered control of chromosomal beta-lactamase to piperacillin, ceftazidime, and cefsulodin[J]. Antimicrobial agents and chemotherapy, 1984, 25(3): 382-384.
[4] King A, Shannon K, Phillips I. In vitro antibacterial activity and susceptibility of cefsulodin, an antipseudomonal cephalosporin, to beta-lactamases[J]. Antimicrobial agents and chemotherapy, 1980, 17(2): 165-169.

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