

Product Name:	Cefonicid Sodium
Product Number:	C243
CAS Number:	61270-78-8
Molecular Formula:	$C_{18}H_{16}N_6O_8S_3 \cdot 2Na$
Molecular Weight:	586.53
Form:	Solid
Appearance:	White to off-white solid
Solubility:	DMSO
Source:	Semi-synthetic
Storage Conditions:	-20°C
Description:	Cefonicid sodium is the disodium salt of Cefonicid. It is a broad-spectrum, second-generation cephalosporin antibiotic that interferes with bacterial cell wall biosynthesis.
Mechanism of Action:	Cephalosporins interfere with PBP (penicillin binding protein) activity involved in the final phase of peptidoglycan synthesis. PBP's are enzymes which catalyze a pentaglycine crosslink between alanine and lysine residues providing additional strength to the cell wall. Without a pentaglycine crosslink, the integrity of the cell wall is severely compromised and ultimately leads to cell lysis and death. Resistance to cephalosporins is commonly due to cells containing plasmid encoded β -lactamases. Cephalosporins interfere with PBP (penicillin binding protein) activity involved in the final phase of peptidoglycan synthesis. PBP's are enzymes which catalyze a pentaglycine crosslink between alanine and lysine residues providing additional strength to the cell wall. Without a pentaglycine crosslink, the integrity of the cell wall is severely compromised and ultimately leads to cell lysis and death. Resistance to cephalosporins is commonly due to cells containing plasmid-encoded β -lactamases.
Spectrum:	Effective against Gram-positive and Gram-negative bacteria.
Microbiology Applications	Cefonicid sodium is effective against E. coli, Klebsiella, Enterobacter, and Citrobacter.

References:

Barry AL, Jones RN, Thornsberry C (1983) Evaluation of the cefonicid disk test criteria, including disk quality control guidelines. J Clin Microbiol. 1983 17(2):232-239 PMID 6601113 Dudley MN, Quintiliani R and Nightingale CH (1984) Review of cefonicid, a long-acting cephalosporin. Clin. Pharm. 3(1):23-32 Kalman D and Barriere SL (1990) Review of the pharmacology, pharmacokinetics, and clinical use of cephalosporins. Texas Heart Inst. J. 17(3):203-215 PMID 15227172 Pochini L et al (2008) Interaction of beta-lactam antibiotics with the mitochondrial carnitine/acylcarnitine transporter. Chem Biol Interact. 73(3):187-194 PMID 18452908

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