Product Name: Cephalothin sodium, USP

Product Number: C026

CAS Number: 58-71-9

Molecular Formula: \( \text{C}_{16}\text{H}_{15}\text{N}_{2}\text{NaO}_{6}\text{S}_{2} \)

Molecular Weight: 418.42

Form: Powder

Appearance: White or almost white crystalline powder

Solubility: freely soluble in aqueous solution (50 mg/mL)

Source: Semi-synthetic

pH: 4.5-7.0 (250 mg/mL)

Optical Rotation: +124° to +134°

Storage Conditions: -20°C

Description: Cephalothin sodium, USP is a semisynthetic, beta-lactam, first generation cephalosporin antibiotic with bactericidal activity. It is effective against Gram-positive and Gram-negative bacteria. Cephalothin sodium is inactivated by cephalosporinase. The compound is freely soluble in aqueous solution (50 mg/mL).

Mechanism of Action: Like \( \beta \)-lactams, 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 \( \beta \)-lactamases.

Spectrum: Cephalothin sodium is a broad spectrum cephalosporin targeting a wide variety of Gram-positive and Gram-negative bacteria especially those which cause respiratory and skin infections.
Microbiology Applications Cephalothin sodium is commonly used in clinical *in vitro* microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against Gram-negative microbial isolates. Medical microbiologists use AST results to recommend antibiotic treatment options for infected patients. Representative MIC values include:

- *Escherichia coli* 0.78 µg/mL - >128 µg/mL
- *Staphylococcus aureus* 0.25 µg/mL - >23.9 µg/mL
- For a complete list of cephalothin MIC values, [click here](#).

Media Supplements

Cephalothin can be used as a selective agent in several types of isolation media:

- **Columbia Blood Agar** - *Campylobacter* selective supplement (Blaser-Wang)

References:


If you need any help, contact us: info@toku-e.com. Find more information on: www.toku-e.com/