Product Name: Mecillinam
Product Number: M001
CAS Number: 32887-01-7
Molecular Formula: $C_{15}H_{23}N_3O_3S$
Molecular Weight: 325.43
Form: Powder
Appearance: White or off-white crystalline powder
Source: Semi-synthetic
Water Content (Karl Fisher): ≤1.0%

pH: 4.0-6.2
Storage Conditions: 2-8°C

Description: Mecillinam is an extended spectrum β-lactam antibiotic in the penicillin class and is sparingly soluble in aqueous solution (0.98 mg/mL)

Mechanism of Action: β-lactams 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 β-lactams is commonly due to cells containing plasmid encoded β-lactamases.

Spectrum: Mecillinam targets primarily gram negative bacteria responsible for urinary tract infections.

Microbiology Applications Mecillinam 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* 8 µg/mL
- For a complete list of mecillinam MIC values, click here.

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