

Product Name:	Azlocillin Sodium
Product Number:	A023
CAS Number:	37091-65-9
Molecular Formula:	$C_{20}H_{22}N_5NaO_6S$
Molecular Weight:	483.47
Form:	Powder
Appearance:	White or almost white powder
Source:	Semi-synthetic
pH:	6.0 - 8.0
Storage Conditions:	$\leq 30^{\circ}C$
Description:	Azlocillin sodium is an extended spectrum β -lactam antibiotic derived from ampicillin. Azlocillin sodium is freely soluble in aqueous solution (50 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 ESBLs (Extended Spectrum β -lactamases).
Spectrum:	Members of the gram negative bacteria including <i>Pseudomonas aeruginosa</i> , <i>Haemophilus influenzae</i> , and <i>Escherichia coli</i> are common targets of azlocillin sodium.
Microbiology Applications	<p>Azlocillin sodium is commonly used in clinical <i>in vitro</i> 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:</p> <ul style="list-style-type: none">• <i>Pseudomonas aeruginosa</i> 0.5 μg/mL – 512 μg/mL• <i>Escherichia coli</i> 0.03 μg/mL - 2 μg/mL• For a complete list of azlocillin MIC values, click here.
References:	<p>Guzmán, Flavio, MD. "Beta Lactams Antibiotics (penicillins and Cephalosporins) Mechanism of Action." <i>Medical Pharmacology</i>. Pharmacology Corner, 29 Nov. 2008. Web. 21 Aug. 2012.</p> <p>Pitout JD, Sanders CC, Sanders WE Jr. Antimicrobial resistance with focus on beta-lactam resistance in gram-negative bacilli. <i>Am J Med</i> 1997; 103:51.</p>

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