

<b>Product Name:</b>	Flucloxacillin sodium
<b>Product Number:</b>	F009
<b>CAS Number:</b>	1847-24-1
<b>Molecular Formula:</b>	C <sub>19</sub> H <sub>16</sub> ClFN <sub>3</sub> NaO <sub>5</sub> S
<b>Molecular Weight:</b>	475.85
<b>Form:</b>	Powder
<b>Appearance:</b>	White or almost White Crystalline Powder
<b>Solubility:</b>	Water: Freely soluble
<b>Source:</b>	Semi-synthetic
<b>Water Content (Karl Fischer):</b>	3.0-4.5%
<b>pH:</b>	5.0-7.0
<b>Melting Point:</b>	176-178°C
<b>Optical Rotation:</b>	+158° to +168°
<b>Storage Conditions:</b>	Ambient
<b>Description:</b>	Flucloxacillin sodium is a narrow spectrum β-lactam antibiotic of the penicillin class and similar in structure to cloxacillin.
<b>Mechanism of Action:</b>	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. Unlike many penicillins, flucloxacillin is resistant to the degradative effects of β-lactamases.
<b>Spectrum:</b>	Flucloxacillin targets primarily the cell wall of susceptible gram positive bacteria including <i>Staphylococcus aureus</i> .
<b>Microbiology Applications</b>	<p>Flucloxacillin is commonly used in clinical <i>in vitro</i> microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against gram positive 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"> <li>• <i>Staphylococcus aureus</i> 0.1 µg/mL – 0.25 µg/mL</li> <li>• For a complete list of flucloxacillin MIC values, <a href="#">click here</a>.</li> </ul>

**References:**

Guzmán, Flavio, MD. "Beta Lactams Antibiotics (penicillins and Cephalosporins) Mechanism of Action." *Medical Pharmacology*. Pharmacology Corner, 29 Nov. 2008. Web. 21 Aug. 2012.

Pitout JD, Sanders CC, Sanders WE Jr. Antimicrobial resistance with focus on beta-lactam resistance in gram-negative bacilli. *Am J Med* 1997; 103:51.

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