

Product Name:	Moxalactam sodium
Product Number:	M021
CAS Number:	64953-12-4
Molecular Formula:	$C_{20}H_{18}N_6Na_2O_9S$
Molecular Weight:	564.44 g/mol
Form:	Powder
Appearance:	White to light yellow powder
Solubility:	Water: Freely soluble
Source:	Synthetic
Absorbance:	UV max (water): 270 nm (ϵ 12000)
Optical Rotation:	$[\alpha]_D^{22} = -45^\circ$ (water)
Storage Conditions:	2-8 °C
Description:	<p>Moxalactam sodium is a third generation cephalosporin antibiotic.</p> <p>TOKU-E offers two forms of moxalactam: moxalactam sodium (M021) and <u>moxalactam diammonium salt (M032)</u>. Moxalactam sodium is freely soluble in aqueous solution at 50 mg/mL. Moxalactam diammonium salt is sparingly soluble in aqueous solution at 0.751 mg/mL.</p>
Mechanism of Action:	<p>Like β-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 β-lactamases.</p>
Spectrum:	<p>Moxalactam targets primarily gram negative bacteria especially those which cause meningitis because of its ability to cross the blood brain barrier.</p>

Microbiology Applications Moxalactam 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:

- *Haemophilus influenzae* 0.03 µg/mL – 0.12 µg/mL
- For a complete list of moxalactam MIC values, [click here](#).

In addition to its use in AST, moxalactam is used as a media supplement in Oxford *Listeria* agar to select for *Listeria monocytogenes* in poultry and processed meats.

References:

Georgopapadakou, N. H. "Mechanisms of Action of Cephalosporin 3'-quinolone Esters, Carbamates, and Tertiary Amines in Escherichia Coli." *American Society for Microbiology* 37.3 (1992): 559-65. *Antimicrobial Agents and Chemotherapy*. Web. 21 Aug. 2012.

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