



# Cefmetazole, free acid PRODUCT DATA SHEET

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<b>Product Name:</b>	Cefmetazole, free acid
<b>Product Number:</b>	C122
<b>CAS Number:</b>	56796-20-4
<b>Molecular Formula:</b>	$C_{15}H_{17}N_7O_5S_3$
<b>Molecular Weight:</b>	471.53
<b>Form:</b>	Powder
<b>Appearance:</b>	White or off-white powder
<b>Water Content (Karl Fischer):</b>	Not more than 1.0%
<b>pH:</b>	2 - 4
<b>Melting Point:</b>	145°C - 155°C
<b>Optical Rotation:</b>	+80° - +88°
<b>Storage Conditions:</b>	-20°C
<b>Description:</b>	Cefmetazole is a broad spectrum second generation cephalosporin antibiotic. TOKU-E offers two forms of cefmetazole: cefmetazole, free acid (C122), and <u>cefmetazole sodium (C052)</u> . Cefmetazole is freely soluble in water 92 mg/mL.
<b>Mechanism of Action:</b>	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.
<b>Spectrum:</b>	Cefmetazole is broad spectrum antibiotic targeting a wide range of Gram-positive and Gram-negative bacteria. Cefmetazole is more potent against many Gram-negative enteric flora and pathogens than other first generation cephalosporins.
<b>Microbiology Applications</b>	Cefmetazole is commonly used in clinical in vitro microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against Gram positive and Gram negative microbial isolates. Medical microbiologists use AST results to recommend antibiotic treatment options for infected patients. Representative MIC values include: <ul style="list-style-type: none"><li>• <i>Bacteroides fragilis</i> 4 <math>\mu</math>g/mL - 32 <math>\mu</math>g/mL</li><li>• <i>Propionibacterium acnes</i> 0.06 <math>\mu</math>g/mL - 0.25 <math>\mu</math>g/mL</li></ul>

For a complete list of cefmetazole MIC values, [click here](#).

**References:**

Georgopapadaku, 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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