



# Cefixime trihydrate PRODUCT DATA SHEET

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<b>Product Name:</b>	Cefixime trihydrate
<b>Product Number:</b>	C051
<b>CAS Number:</b>	125110-14-7 (trihydrate); 79350-37-1 (anhydrous)
<b>Molecular Formula:</b>	$C_{16}H_{15}N_5O_7S_2 \cdot 3 H_2O$
<b>Molecular Weight:</b>	507.50
<b>Form:</b>	Powder
<b>Appearance:</b>	Light yellow crystalline powder
<b>Source:</b>	Synthetic
<b>Water Content (Karl Fischer):</b>	9.0-12.0%
<b>pH:</b>	2.6-4.1
<b>Optical Rotation:</b>	-75° to -88°
<b>Storage Conditions:</b>	-20°C
<b>Description:</b>	<p>Cefixime trihydrate is a broad-spectrum third generation cephalosporin targeting a wide range of Gram-positive and Gram-negative organisms. Cefixime trihydrate is especially useful against pathogens responsible for respiratory tract infections such as <i>Haemophilus influenzae</i> and <i>Moraxella catarrhalis</i>.</p>
<b>Mechanism of Action:</b>	<p>Like <math>\beta</math>-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 <math>\beta</math>-lactamases. Cefixime however, is resistant to many <math>\beta</math>-lactamases encoded by <math>\beta</math>-lactam resistant strains.</p>
<b>Spectrum:</b>	Effective against Gram-positive and Gram-negative bacteria.

**Microbiology Applications** Cefixime trihydrate 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:

- *Haemophilus influenzae* 0.008 µg/mL – 2 µg/mL
- *Moraxella catarrhalis* 0.06 µg/mL – 0.5 µg/mL
- For a complete list of Cefixime MIC values, [click here](#).

## Media Supplements

Cefixime can be used as a selective agent in several types of isolation media:

[Sorbitol Macconkey Agar](#) - Cefixime-Tellurite Supplement

[mTSB](#) - VCC Selective Supplement

[CR-SMAC](#) - Cefixime Supplement

## References:

Wenzel U, Kuntz S, Diestel S and Daniel H (2002) PEPT1-mediated cefixime uptake into human intestinal epithelial cells is increased by Ca<sup>2+</sup> channel blockers. *Antimicrob. Agents. Chemother.* 46(5):1375-1380

Wenzel U, Kuntz S and Daniel H (2001) Flavonoids with epidermal growth factor-receptor tyrosine kinase inhibitory activity stimulate PEPT1-mediated cefixime uptake into human intestinal epithelial cells. *J. Pharmacol. Exp. Ther.* 299(1):351-357 PMID 11561098

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