Ceftazidime solubilized
PRODUCT DATA SHEET

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Product Name:	Ceftazidime solubilized
Product Number:	C019
CAS Number:	mixture
Form:	Powder
Appearance:	white or off-white crystalline powder
Solubility:	sparingly soluble in aqueous solution (0.396 mg/mL). Organic solvents used to facilitate dissolution.
Source:	semi-synthetic
Storage Conditions:	2-8C
Description:	Ceftazidime solubilized is a broad-spectrum, third-generation, β-lactam cephalosporin. Patented in 1978, it came into commercial use in 1984. It interferes with bacterial cell wall synthesis. It is sparingly soluble in aqueous solution, but acidic and alkali solvents are commonly used to facilitate dissolution.
Mechanism of Action:	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, however, ceftazidime is stable in the presence of β-lactamases.
Spectrum:	Ceftazidime is broad-spectrum, targeting both Gram-negative and Gram-positive bacteria, but is most effective for Gram-negative strains including *Pseudomonas aeruginosa.* It is also used against *Streptococus pneumoniae, and S. pyogenes.* It is effective against *Enterobacteriaceae* (including β-lactamase positive strains).

Microbiology Applications Ceftazidime 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. Representative MIC values include:

- *Pseudomonas aeruginosa* 1 µg/mL – 64 µg/mL
- *Escherichia coli* 0.06 µg/mL – >32 µg/mL
- For a representative list of Ceftazidime MIC values, click here.

Media Supplements

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

PALCAM Agar - PALCAM Selective Supplement

Chromogenic*Listeria* Agar - Chromogenic *Listeria* Selective Supplement

Chromogenic*Listeria* Agar - Chromogenic *Listeria* Differential Supplement

References:

Fischer J, Ganellin R (2006). Analogue-based Drug Discovery. John Wiley & Sons. p. 495

Georgopapadakou NH (1992) Mechanisms of action of cephalosporin 3'-quinolone esters, carbamates, and tertiary amines in Escherichia coli. *Antimicrob. Agents. Chemother.* 37(3): 559-565