

<b>Product Name:</b>	Ceftaroline Fosamil
<b>Product Number:</b>	C230
<b>CAS Number:</b>	400827-46-5
<b>Molecular Formula:</b>	$C_{24}H_{25}N_8O_{10}PS_4$
<b>Molecular Weight:</b>	744.73
<b>Solubility:</b>	DMSO (30 mg/ml).
<b>Storage Conditions:</b>	-20°C
<b>Description:</b>	<p>Ceftaroline Fosamil is a novel fifth-generation cephalosporin, a broad-spectrum <math>\beta</math>-lactam active against MRSA and respiratory pathogens. It goes by the name Teflaro in the US and Zinforo in Europe. It can be used for community-acquired pneumonia and complicated skin and skin structure infections. The compound is soluble in DMSO (30 mg/ml).</p>
<b>Mechanism of Action:</b>	<p>Ceftaroline Fosamil binds to penicillin-binding protein (PBP) which prevents the formation of the bacterial cell wall. MRSA strains have a mutated PBP2a which prohibits <math>\beta</math>-lactam antibiotics from accessing its active site. Ceftaroline has an ethoxyimino side-chain mimicking a portion of a cell wall structure, which opens and facilitates access to the active site of PBP2a.</p> <p>Ceftaroline Fosamil is a prodrug that is converted <i>in vivo</i> to active metabolite Ceftaroline by plasma phosphatases.</p>
<b>Spectrum:</b>	<p>Ceftaroline Fosamil is broad-spectrum against Gram-positive and Gram-negative bacteria. It is effective against methicillin-resistant <i>Staphylococcus aureus</i> (MRSA), and extensively-resistant strains such as vancomycin-resistant <i>S. aureus</i> (VRSA), vancomycin-intermediate <i>S. aureus</i> (VISA), and heteroresistant VISA (hVISA). It is also effective against respiratory pathogens like <i>Streptococcus pneumoniae</i> and <i>Haemophilus influenzae</i>.</p>

**Microbiology Applications** *In vitro* studies show a similar spectrum to ceftobiprole, the only other 5<sup>th</sup> generation cephalosporin to date.

### Microbiology Applications

Ceftaroline is commonly used in clinical *in vitro* microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips). Medical microbiologists use AST results to recommend antibiotic treatment options for infected patients. Representative MIC values include:

- *MRSA* 0.5-2.0 µg/ml
- *MSSA* 0.25 µg/ml
- *hVISA* 0.25-4 µg/ml
- For a complete list of Ceftaroline MIC values, [click here](#).

### References:

Biek D, Critchley IA, Riccobene TA and Thye DA (2010) Ceftaroline fosamil: A novel broad-spectrum cephalosporin with expanded anti-Gram-positive activity. J. Antimicrob. Chemother. 65(4):iv9-iv16 PMID 21115457

Duplessis C and Crum-Cianflone NF (2011) Ceftaroline: A new cephalosporin with activity against methicillin-resistant *Staphylococcus aureus* (MRSA). Clin. Med. Rev. Ther. 3. a2466. PMID 21785568

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Saravolatz LD, Stein GE and Johnson LB (2011) Ceftaroline: A novel cephalosporin with activity against methicillin-resistant *Staphylococcus aureus*. Clin. Infect. Dis. 52(9):1156-1163 PMID 21467022

Zhanel GC et al (2009) Ceftaroline. Drugs 69(7):809-831

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