

5th Generation Cephalosporin

Fifth generation cephalosporins are broad spectrum antibiotics which are beta-lactams. These antibiotics were specifically created in labs to target resistant organisms, such as methicillin-resistant Staph aureus (MRSA).



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Mechanism

Beta-Lactam

[Black-beta-fish](#)

Cephalosporins are beta-lactam antibiotics and have a beta-lactam ring in their structure, working to inhibit bacterial cell wall biosynthesis.

Indications

Resistant Bacteria

[Resistance-bandana Bacteria-guy](#)

Fifth-generation cephalosporins are indicated for treating bacteria that are otherwise resistant to other commonly used antibiotics. One example of this drug's effectiveness is against MRSA.

Broad Spectrum Gram-Positive and Gram-Negative

[Broad Spectrum-of-colors with Gram Positive-angel and Gram Negative-devil](#)

This drug class has a broad spectrum of applicability and inhibits the growth of a wide variety of gram-positive and gram-negative bacteria.

Drugs

Ceftobiprole

[Chef-tadpole](#)

This drug has been called a 5th-generation cephalosporin, but the terminology is not universally accepted. This drug has powerful antipseudomonal activity and binds strongly to penicillin-binding protein 2a. It has activity against MRSA, Streptococcus pneumoniae, and enterococci as well.

Has Pseudomonas Coverage

[Sumo-Mona Covered](#)

Ceftobiprole is a newer medication used for healthcare-associated pneumonia (HCAP), which has powerful antipseudomonal coverage. Additionally, this drug also covers MRSA strains which are less susceptible to daptomycin, vancomycin, or linezolid.

Ceftaroline

[Chef-tortellini](#)

Ceftaroline has broad-spectrum activity against many gram-positive organisms, such as MRSA, MRSE, and VRE. It does not have great coverage of beta-lactam gram-negative bacteria, such as bacteroides.

No Pseudomonas Coverage

[No-sign Sumo-Mona](#)

It should be noted that, unlike 3rd- and 4th-generation cephalosporins, the 5th-generation cephalosporin ceftaroline is not effective against Pseudomonas infections.