# 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.

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