

Antimicrobial Spectrum of Activity

| Antimicrobial | Gram (+) | MRS A | Gram (-) | <i>P.aeruginosa</i> | Anaerobes | Atypicals | Comments |
|---|----------|-------|----------|---------------------|-----------|-----------|---|
| Penicillin (PO, IV) | ✓ | | | | | | DOC: <i>Streptococcus</i> (not <i>pneumoniae</i>), <i>Peptostreptococcus</i> , Syphilis |
| Nafcillin (IV) | ✓ | | | | | | DOC: MSSA Can cause significant phlebitis, vesication. |
| Amoxicillin (PO), Ampicillin (IV) | ✓ | | | | | | DOC: <i>Enterococcus faecalis</i> |
| Amox/clavulanate (PO), Amp/sulbactam (IV) | ✓ | | ✓ | | ✓ | | Sulbactam has poor blood brain barrier penetration, do not use for CNS infection. |
| Piperacillin/tazobactam (IV) | ✓ | | ✓ | ✓ | ✓ | | Tazobactam has poor blood brain barrier penetration, not preferred for CNS infection. |
| Cephalexin (PO), cefazolin (IV) | ✓ | | ± | | | | 1 st generation |
| Cefoxitin (IV), cefotetan (IV), cefuroxime (PO) | | | ✓ | | ✓ | | 2 nd generation |
| Cefdinir (PO), cefpodoxime (PO), ceftriaxone (IV) | ✓ | | ✓ | | | | 3 rd generation |
| Ceftazidime (IV) | ✓ | | ✓ | ✓ | | | 3 rd generation. Not preferred for empiric <i>Pseudomonas</i> coverage. |
| Cefepime (IV) | ✓ | | ✓ | ✓ | | | 4 th generation. Covers AmpC producing organisms. Good CNS penetration. |
| Ceftaroline (IV) | ✓ | ✓ | ✓ | | | | 5 th generation ID approval |
| Ertapenem (IV) | ± | | ✓ | | ✓ | | Does NOT cover <i>Pseudomonas</i> . |
| Meropenem (IV) | ± | | ✓ | ✓ | ✓ | | Adequate CNS penetration, use high dose for meningitis. Covers <i>Listeria</i> . |
| Aztreonam (IV) | | | ✓ | ✓ | | | Use in anaphylactic penicillin allergy. |
| Amikacin (IV), Tobramycin (IV), Gentamicin (IV) | | | ✓ | ✓ | | | Do not use as monotherapy for resistant gram negative infections. May use as synergy for gram positive infection. Pharmacy to dose. |
| Vancomycin (IV) | ✓ | ✓ | | | | | Pharmacy to dose. |

Antimicrobial Spectrum of Activity

| | | | | | | | |
|-----------------------------|---|-----------|---|---|---|---|---|
| Linezolid (PO, IV) | ✓ | ✓ | | | | | Covers VRE. 100% bioavailability, excellent bone and CNS penetration. Provides toxin inactivation in necrotizing infection. |
| Daptomycin (IV) | ✓ | ✓ | | | | | Covers VRE. Inactivated by pulmonary surfactant, do not use for pneumonia. |
| Clindamycin (IV) | ✓ | ✓ (CA) | | | ± | | Provides toxin inactivation in necrotizing infection. |
| Levofloxacin (PO, IV) | ✓ | | | ✓ | | ✓ | ID approval required. Alternative agent for <i>Stenotrophomonas</i> . |
| SMX/TMP (PO, IV) | ✓ | ✓ (CA) | ✓ | | | | DOC: <i>Stenotrophomonas</i> , <i>Pneumocystis jirovecii</i> pneumonia (PJP). 90% bioavailability |
| Metronidazole (PO, IV) | | | | | ✓ | | DOC: <i>Bacteroides fragilis</i> 90-100% bioavailability |
| Doxycycline (PO, IV) | ✓ | ✓ (CA) | | | | ✓ | DOC: <i>Vibrio vulnificus</i> |
| Minocycline (PO, IV) | ✓ | | ✓ | | | ✓ | Alternative agent for resistant <i>Stenotrophomonas</i> . |
| Azithromycin (PO, IV) | ✓ | | | | | ✓ | May cause QTc prolongation. |
| Ceftazidime/avibactam (IV) | ± | | ✓ | ✓ | | | ESBL, AmpC, CROs ID approval |
| Ceftolozane/tazobactam (IV) | ± | | ✓ | ✓ | | | ESBL, AmpC ID approval |
| Imipenem/relebactam (IV) | ✓ | | ✓ | ✓ | ✓ | | ESBL, AmpC, CROs ID approval |
| Meropenem/vaborbactam (IV) | ± | | ✓ | ✓ | ✓ | | ESBL, AmpC, CROs ID approval |

DOC – drug of choice

CA – community acquired

ESBL – likely resistant to penicillins, 1st, 2nd, and 3rd generation cephalosporins, and aztreonam

AmpC – inducible resistance to ceftriaxone. Organisms including *Enterobacter sp.*, *Klebsiella aerogenes*, & *Citrobacter sp.*

CRO – carbapenem resistant organism