



ANTIBIOTIC SPECTRUM

What covers what · gram-positive vs gram-negative

MATCH THE

bug

✓ covers ~ variable / partial - no. Gram+ = strep / staph / enterococcus Gram- = Enterobacterales (E. coli, Klebsiella) · Pseud = Pseudomonas · Anaer = anaerobes · Atyp = Legionella / Mycoplasma

SPECTRUM OF ACTIVITY

cover the likely bug, then de-escalate

Antibiotic	Gram+	MRSA	Gram-	Pseud	Anaer	Atyp	Key bugs / use
Amox / ampicillin	✓	-	~	-	~	-	Strep, enterococcus, Listeria; limited GNB
Co-amoxiclav	✓	-	✓	-	✓	-	Adds β-lactamase GNB + anaerobes; NOT Pseudomonas
Flucloxacillin	✓	-	-	-	-	-	MSSA + strep only (anti-staph penicillin)
Piperacillin-tazo	✓	-	✓	✓	✓	-	Broad incl Pseudomonas + anaerobes; NOT MRSA
Ceftriaxone	✓	-	✓	-	-	-	Strep, Enterobacterales; not Pseudomonas / enterococcus
Ceftazidime	~	-	✓	✓	-	-	Gram-neg + Pseudomonas; weak Gram+
Cefepime	✓	-	✓	✓	-	-	Broad incl Pseudomonas; NOT MRSA / anaerobes
Meropenem	✓	-	✓	✓	✓	-	Very broad incl ESBL, Pseudomonas, anaerobes
Ertapenem	✓	-	✓	-	✓	-	Broad incl ESBL + anaerobes; NO Pseudomonas
Vancomycin	✓	✓	-	-	-	-	Gram+ incl MRSA; oral for C. difficile
Linezolid	✓	✓	-	-	-	-	Gram+ incl MRSA + VRE; good lung penetration
Metronidazole	-	-	-	-	✓	-	Anaerobes only (+ C. difficile, protozoa)
Clindamycin	✓	~	-	-	✓	-	Gram+ + anaerobes; suppresses toxin
Ciprofloxacin	~	-	✓	✓	-	✓	Gram-neg + Pseudomonas + atypicals; weak Gram+
Levofloxacin	✓	-	✓	~	-	✓	Respiratory FQ: adds Gram+ / pneumococcus
Azithromycin	~	-	-	-	-	✓	Atypicals (Legionella, Mycoplasma) + some Gram+
Gentamicin	-	-	✓	✓	-	-	Gram-neg + Pseudomonas (synergy); NO anaerobes
Daptomycin	✓	✓	-	-	-	-	Gram+ incl MRSA / VRE; NEVER for lung (inactivated by surfactant)
Aztreonam	-	-	✓	✓	-	-	Gram-neg incl Pseudomonas; safe in penicillin allergy
Colistin	-	-	✓	✓	-	-	MDR Gram-neg last resort (CRE, Acinetobacter); nephrotoxic

REMEMBER

- Only vancomycin, linezolid (and daptomycin - not for lung) reliably cover MRSA.
- No single agent covers MRSA + Pseudomonas + anaerobes + atypicals - combine deliberately.
- Ertapenem is the carbapenem that does NOT cover Pseudomonas.
- Broadest is not best: match the spectrum to the likely bug, then de-escalate on cultures.

References: Simplified for empiric ICU use · confirm sensitivities & local antibiogram · Sanford / IDSA.

Educational aid; verify doses against local protocol and patient factors.

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