



Know Your Antibiotic: Extent of Ertapenem's Effectiveness

Ertapenem is a carbapenem antibiotic with a spectrum of activity that differs from other carbapenems (e.g. meropenem, imipenem-cilastatin). Ertapenem is administered once-daily making it an appealing choice for outpatient parenteral antibiotic therapy (OPAT). What gaps in spectrum does ertapenem have compared to other carbapenems?

What does Ertapenem Treat?

Similar to other carbapenems, ertapenem has broad activity against Enterobacterales including organisms producing [ESBLs](#) or [AmpC](#) beta-lactamases. Additionally ertapenem is active against anaerobes (e.g. *Bacteroides* spp) and oxacillin susceptible *Staphylococcus* spp (e.g. MSSA).¹

What does Ertapenem NOT Treat?

While it retains activity against a broad range of gram-positive and gram-negative pathogens, key holes in its spectrum include *P. aeruginosa*, *Acinetobacter* spp, and *Enterococcus* spp.¹ A mnemonic that can help remember these pathogens is "APE." Remember, no carbapenems have activity against MRSA.



Ertapenem **lacks** activity for:

A

Acinetobacter species

P

Pseudomonas aeruginosa

E

Enterococcus species

What should I use if ertapenem is resistant but meropenem and/or imipenem-cilastatin is susceptible?

If an Enterobacterales organism is resistant to ertapenem, other carbapenems may still be active. The IDSA guidance document suggests using **extended infusion** meropenem and imipenem-cilastatin for severe infections when the organism is resistant to ertapenem and **NO** [carbapenemase](#) has been identified. Standard infusions may be reasonable for uncomplicated cystitis.³

Key Takeaway:

Ertapenem does not have activity against *Acinetobacter* spp, *P. aeruginosa*, and *Enterococcus* spp, but remains a good option for ESBL infections requiring outpatient parenteral therapy. Resistance to ertapenem does NOT predict resistance to meropenem or imipenem-cilastatin.

References:

1. CLSI. *Performance Standards for Antimicrobial Susceptibility Testing*. 34th ed. CLSI supplement M100. Wayne, PA: Clinical and Laboratory Standards Institute: 2024.
2. Brink AJ, Richards GA, Schillack V, Kiem S, Schentag J. Pharmacokinetics of once-daily dosing of ertapenem in critically ill patients with severe sepsis. *Int J Antimicrob Agents*. 2009;33(5):432-436. doi:10.1016/j.ijantimicag.2008.10.005
3. Tamma PD, Aitken SL, Bonomo RA, Mathers AJ, van Duin D, Clancy CJ. Infectious Diseases Society of America Antimicrobial-Resistant Treatment Guidance: Gram-Negative Bacterial Infections. Infectious Diseases Society of America 2023; Version 3.0. Available at <https://www.idsociety.org/practice-guideline/amr-guidance/>. Accessed 25 March 2024.