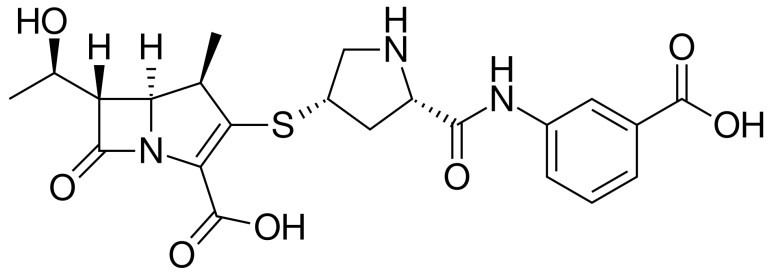
Brand Name: Invanz
Generic: ertapenem
Type: small molecule
Year Accepted/Phase: 2015

Mechanism:

Ertapenem belongs to the carbapenem class of antibiotics, which are beta-lactam antibiotics similar to penicillins and cephalosporins. It works by inhibiting the synthesis of bacterial cell walls through binding to penicillin-binding proteins (PBPs). This action disrupts the bacterial cell wall synthesis, leading to cell death.

Chemical Structure:



Indication:

Invanz is indicated for the treatment of the following infections:

Complicated intra-abdominal infections

Complicated skin and skin structure infections, including diabetic foot infections without osteomyelitis

Community-acquired pneumonia (CAP)

Complicated urinary tract infections, including pyelonephritis

Acute pelvic infections, including postpartum endomyometritis, septic abortion, and post-surgical gynecologic infections

Clinical trials:

Study 018 (Phase III)
Purpose: Evaluate the efficacy and safety of ertapenem compared to ceftriaxone in the treatment of community-acquired pneumonia (CAP).
Dates: Conducted from 2000 to 2002.
Results: Ertapenem was found to be non-inferior to ceftriaxone in treating CAP, with similar clinical cure rates and microbiological eradication rates.
Impact: These results supported the use of ertapenem as an effective treatment for CAP, leading to its approval for this indication.

Study 019 (Phase III)
Purpose: Compare the efficacy and safety of ertapenem versus piperacillin/tazobactam in the treatment of complicated intra-abdominal infections.
Dates: Conducted from 2000 to 2002.
Results: Ertapenem was shown to be non-inferior to piperacillin/tazobactam, with similar clinical and microbiological outcomes.
Impact: This trial helped establish ertapenem as an effective option for treating complicated intra-abdominal infections.

Study 027 (Phase III)
Purpose: Evaluate the efficacy and safety of ertapenem in the treatment of complicated skin and skin structure infections, including diabetic foot infections.
Dates: Conducted from 2000 to 2002.
Results: Ertapenem demonstrated non-inferiority to piperacillin/tazobactam, with comparable clinical cure rates and microbiological eradication rates.
Impact: The study supported the approval of ertapenem for treating complicated skin and skin structure infections.

Study 028 (Phase III)
Purpose: Assess the efficacy and safety of ertapenem compared to ceftriaxone in the treatment of complicated urinary tract infections (UTIs).
Dates: Conducted from 2000 to 2002.
Results: Ertapenem was found to be non-inferior to ceftriaxone, with similar clinical and microbiological outcomes in patients with complicated UTIs.
Impact: These results contributed to the approval of ertapenem for the treatment of complicated UTIs.