

# Carbapenems - beta-lactam antibiotics

- **Spectrum of coverage - bactericidal activity**
  - stable to most beta-lactamases
  - Gram-positive bacteria
  - Gram-negative bacteria
    - Enterobacteriaceae
    - Pseudomonas aeruginosa (except Ertapenem)
    - beta-lactamase-producing H. influenzae and N. gonorrhoea
  - Anaerobic bacteria (including Bacteroides fragilis)
  - No coverage against the following organisms:
    - Enterococcus faecium
    - MRSA
- **Antibiotics - Carbapenems are only available IV**
  - **Meropenem (Merrem)**
    - MSSA, Strep pyogenes, Strep agalactia, Strep viridens, Enterococcus faecalis, Pseudomonas, E. coli, Proteus mirabilis, Bacteroides fragilis, Peptostreptococcus
  - **Ertapenem (Invanz)**
    - indicated for diabetic foot infections
    - Good option for PICC line therapy due to once-daily dosing
    - active against most Enterobacteriaceae
    - active against anaerobes
    - good gram + coverage (no MRSA)
    - No coverage against Pseudomonas
    - Long 1/2 life - once daily dosing
  - **Imipenem-cilastatin (Primaxin)**
    - Imipenem inhibited by renal dihydropeptidase I
      - Cilastatin - prevents the breakdown of Imipenem by renal dihydropeptidase
    - Indicated for severe bacterial infections
  - **Doripenem (Doribax) - approved in 2007**
    - used to treat intra-abdominal and urinary tract infections