

Characteristic	Imipenem	Meropenem	Aztreonam
Combination	Marketed with cilastatin	Does not require cilastatin	-
Renal Dehydropeptidase Inhibition	Inhibited by cilastatin	Not sensitive to renal dehydropeptidase	-
Resistance to β-lactamases	Resistant to hydrolysis by most β -lactamases	Similar antimicrobial activity as Imipenem, with activity against some imipenem-resistant <i>P. aeruginosa</i>	Resistant to many β -lactamases except those of Enterobacteriaceae
Anti-microbial Activity	- Active against penicillinase-producing strains of <i>Staph. aureus</i> - Inhibits most strains of <i>Pseudomonas</i> - Effective against Enterobacteriaceae but not carbapenemase-producing strains	Similar antimicrobial activity as Imipenem	Antimicrobial activity against gram-negative organisms like <i>Pseudomonas aeruginosa</i> , <i>H. influenza</i> , and Enterobacteriaceae. No activity against gram-positive organisms or anaerobes.
Pharmacokinetics	Given i.v. and hydrolyzed by renal dehydropeptidase. Cilastatin is added.	Does not require cilastatin, not sensitive to renal dehydropeptidase	-
Side Effects	Nausea, vomiting, and possibly seizures. Allergy risk in penicillin-allergic patients	Less likely to cause seizures	Patients sensitive to penicillins or cephalosporins do not react to Aztreonam
Therapeutic Uses	- Urinary tract infection - Lower respiratory tract infection - Intra-abdominal and gynecological infection - Soft tissue, bone, and joint infection - Treatment of Cephalosporin-resistant nosocomial infection	Similar therapeutic uses as Imipenem	Used in severe infections caused by gram-negative bacteria

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