

IMIPENEM + CILISTATIN

Trade Name	Imipenem + Cilistatin RBX (Douglas)								
Class	Carbapenem beta lactam antibiotic with broad spectrum of activity, combined with Cilastatin.								
Mechanism of Action	Bactericidal activity by interfering with bacterial cell wall synthesis. Imipenem is combined in a 1:1 ratio with cilastatin (a renal dipeptidase inhibitor with no intrinsic antibacterial activity), thereby reducing renal brush border inactivation of imipenem.								
Indications Individual ID approval required for full treatment course	Restricted to treatment of non-CNS infections caused by bacteria, primarily enterobacteriaceae and anaerobes, resistant to other antibiotics.								
Contraindications	Hypersensitivity to any part of this preparation. Caution in beta lactam antibiotic allergy – there may be cross reactivity. Should not be used for CNS infections.								
Supplied As	500mg vials (500mg of imipenem and 500mg of cilastatin) Prescribe as mg/kg of imipenem.								
Dilution *Two dilution steps required*	Vial	Water Added	Total Volume						
	500mg	10mL	10mL						
	Concentration 50mg/mL								
Shake well, then further dilute by taking 1mL(50mg) and adding 9mL of normal saline to give a final concentration of 5mg/mL.									
Dosage	20 mg/kg per dose. Doses of 25mg/kg have been used from 1 week of age.								
Interval	<table border="1"> <thead> <tr> <th>Age</th> <th>Interval</th> </tr> </thead> <tbody> <tr> <td>≤ 7 days</td> <td>12</td> </tr> <tr> <td>>7 days</td> <td>8</td> </tr> </tbody> </table>			Age	Interval	≤ 7 days	12	>7 days	8
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Administration	Intermittent IV infusion over 20 - 30 minutes IV bolus – not recommended IM – not permitted								

Compatible With	<p>Solutions: Sodium chloride 0.9%, glucose 5% and 10%, mannitol 5 and 10%, glucose 5%/potassium chloride 0.15%.</p> <p>Terminal Y-site: compatibility (if given above in-line filter) with: aciclovir, cefepime, insulin, linezolid, midazolam, propofol zidovudine, fat emulsion.</p>
Incompatible With	Amikacin, amiodarone, azithromycin, fluconazole, gentamicin, lorazepam, milrinone, sodium bicarbonate, and tobramycin.
Monitoring	<p>Periodic CBC and hepatic transaminases.</p> <p>Assess IV site for signs of phlebitis.</p>
Stability	<p>Discard opened vial immediately after use</p> <p>Discard unused reconstituted 5mg/mL solution immediately</p> <p>Use a new vial to draw up each dose</p> <p>The colour of the solution may vary from colourless to pale yellow. This does not represent any change in potency.</p>
Storage	Store powder at room temp <30 °C
Adverse Reactions	<p>Seizures occur frequently in patients with meningitis, preexisting CNS pathology and severe renal dysfunction.</p> <p>Local reactions at the injection site and increased platelet counts are the most frequent adverse effects.</p> <p>Others including eosinophilia, elevated hepatic transaminases, and diarrhoea also occur in more than 5% of patients.</p>
Metabolism	<p>Clearance is directly related to renal function (70% is excreted unchanged in the urine). Serum half life of imipenem in neonates is 2.5 hrs, the half life of cilastatin is 9 hrs.</p> <p>CNS penetration is poor with imipenem. Meropenem should be used if meningitis suspected.</p>
Comments	<p>Avoid concomitant use with other beta lactam antibiotics as possible in vitro antagonism.</p> <p>Sodium content is 1.6mmol per 500mg vial</p>
References	<ol style="list-style-type: none"> 1. Neofax fourteenth edition 2001 2. "Medicines for Children" Royal College of Paediatrics and Child Health 1999 3. www.medsafe.govt.nz/profs/datasheet/p/primaxininj.htm 4. LA Trissel, Handbook on Injectable Drugs, 11th Ed., 2001 5. www.noids.nz
Updated By	<p>Garth Smith August 2002</p> <p>A Lynn, B Robertshawe September 2009</p> <p>A Lynn, B Robertshawe Oct 2012 (re-order profile, 2 dilution, discard vial)</p> <p>A Lynn, Tony Walls (Paed ID) July 2013 (PHARMAC update Ab approvals)</p> <p>A Lynn, B Robertshawe May 2021 (update brand, route of administration & compatibilities)</p>