

Antibiotic Stability in Selected Peritoneal Dialysate (PD) solutions

- STABLE at room temperature and body temperature for **24 HOURS** unless otherwise stated.
- HEPARIN addition at 500-1000 units/litre does not affect stability – may be added if ordered by physician (9)
- Regular Insulin added to PD bags containing antibiotics does not affect stability of the antibiotics, and is permitted (8,9)

Drug	Dianeal	Extraneal	Physioneal	Nutrineal
Cefazolin Tobramycin	Compatible Ref 5	Compatible Ref 5	“Vancomycin, aminoglycosides, and cephalosporins can be mixed in the same dialysis solution bag without loss of bioactivity” Ref 6	“Vancomycin, aminoglycosides, and cephalosporins can be mixed in the same dialysis solution bag without loss of bioactivity” Ref 6
Ceftazidime Vancomycin	In clinical practice these medications are routinely added to Dianeal (9). There are no formal compatibility studies or references.	Compatible Ref 5	“Vancomycin, aminoglycosides, and cephalosporins can be mixed in the same dialysis solution bag without loss of bioactivity” Ref 6	“Vancomycin, aminoglycosides, and cephalosporins can be mixed in the same dialysis solution bag without loss of bioactivity” Ref 6
Ceftazidime	In clinical practice Ceftazidime is routinely added to Dianeal (9). There are no formal compatibility studies or references.	In clinical practice Ceftazidime is routinely added to Extraneal. “ <i>In vitro</i> compatibility studies with EXTRANEAL and the following antibiotics have demonstrated no effects with regard to minimum inhibitory concentration (MIC): vancomycin, cefazolin, ampicillin, ampicillin/flucoxacillin, ceftazidime, gentamicin, and amphotericin”. Ref 3,6.	“Vancomycin, aminoglycosides, and cephalosporins can be mixed in the same dialysis solution bag without loss of bioactivity” Ref 6	“Vancomycin, aminoglycosides, and cephalosporins can be mixed in the same dialysis solution bag without loss of bioactivity” Ref 6

Drug	Dianeal	Extraneal	Physioneal	Nutrineal
Cefazolin Gentamicin	compatible Ref 2	“Vancomycin, aminoglycosides, and cephalosporins can be mixed in the same dialysis solution bag without loss of bioactivity” Ref 6	“Vancomycin, aminoglycosides, and cephalosporins can be mixed in the same dialysis solution bag without loss of bioactivity” Ref 6	“Vancomycin, aminoglycosides, and cephalosporins can be mixed in the same dialysis solution bag without loss of bioactivity” Ref 6
Vancomycin Gentamicin	In clinical practice these medications are routinely added to Dianeal (9). There are no formal compatibility studies or references.	“Vancomycin, aminoglycosides, and cephalosporins can be mixed in the same dialysis solution bag without loss of bioactivity” Ref 6	“Vancomycin, aminoglycosides, and cephalosporins can be mixed in the same dialysis solution bag without loss of bioactivity” Ref 6	“Vancomycin, aminoglycosides, and cephalosporins can be mixed in the same dialysis solution bag without loss of bioactivity” Ref 6
Tobramycin Vancomycin	compatible Ref 1	compatible Ref 5	“Vancomycin, aminoglycosides, and cephalosporins can be mixed in the same dialysis solution bag without loss of bioactivity” Ref 6	“Vancomycin, aminoglycosides, and cephalosporins can be mixed in the same dialysis solution bag without loss of bioactivity” Ref 6
Potassium chloride (KCl):				
in <u>clinical practice</u> , KCl is routinely added to the above PD solutions, with or without antibiotics (9). There are no compatibility studies or references available.				
Sodium bicarbonate (NaHCO₃)	NaHCO ₃ concentration 21.8 mEq/L up to 24 hours. Ref 1, 7	no info *	no info *	no info *
*Sodium bicarbonate (NaHCO₃): there are no compatibility studies or references to confirm compatibility with Extraneal, Physioneal or Nutrineal, nor with any of the antibiotics listed above. Not recommended.				

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30 April 2012

References:

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2. de Vin F, Rutherford P, Faict D. Intraperitoneal administration of drugs in peritoneal dialysis patients: A review of compatibility and guidance for clinical use. *Peritoneal Dialysis International* 2009;29:5-15.
3. Extraneal drug monograph. Baxter. Last updated: Oct 13, 2011.
4. Nutrineal drug monograph. Baxter. Last updated: Jan 22, 2010.
5. FH "Helpful hints for PD and IP medications" online. Cited November 14, 2011
6. ISPD Guidelines: Peritoneal dialysis-related infections recommendations: 2010 update. *Peritoneal dialysis international* 2010; 30:393-423.
7. Manitoba renal program: Intra-peritoneal medications – Sodium bicarbonate Dec 2010
8. de Vin F, Rutherford P, Faict D. Intraperitoneal administration of drugs in peritoneal dialysis patients: a review of compatibility and guidance for clinical use. *Perit Dial Int* 2009; 29:5 -15.
9. Personal communication with Dr Colin White, Nephrologist, April 2012