Vancomycin

General	
• Class of the drug:	Glycopeptide antibiotics
• Synonym(s):	
• Common trade name(s) in Switzerland:	Vancocin®
• Conversion factors:	*mg/l x 0.69 = µmol/l* *µmol/l x 1.45 = mg/l*
Clinical pharmacology	
• Indications for TDM:	Individual dose adaptation, suspicion of toxicity, side effects
• Protein binding:	30 - 55%
• Elimination half-life:	4 - 6 h neonates: 4 – 22 h
• Volume of distribution:	0.2 - 1.3 l/kg
• Metabolism:	
- Main metabolic pathways:	No metabolism
- Active metabolite(s)?	None
- Inhibitor or inducer of the cytochrome P450 system?	No
- Other significant pharmacokinetic interactions:	None
• Elimination of parent drug:	Renal 100%
• Typical therapeutic range:	Peak concentration: 20 – 40 mg/l (14 - 28 µmol/l) Trough concentration: 5 - 10 mg/l (3.5 – 6.9 µmol/l)
• Potentially toxic concentration:	Peak concentration: lack of evidence for toxicity associated with peak levels in patients with normal renal function Trough concentration: > 15 mg/l (> 10 µmol/l)
Pre-analytics	
• Time to steady-state since beginning of treatment or change of posology:	Steady-state is generally achieved after 3 doses
• Time for blood sampling:	Peak: one hour after beginning of infusion Trough: within 30 minutes of next dose
• Type(s) of sample:	Serum or plasma
• Stability:	1 week at 4°C

Analytics	
• Position(s) in the analysis list/Method:	8628.01 Immunological
Remarks	• Accumulation of vancomycin crystalline degradation products (CDP) in renally impaired patients may cause falsely elevated serum vancomycin concentrations with certain immunoassays • Incompatibility with heparine, CAVE portacath • Elimination is strongly dependent on renal function • Avoid gel tubes if possible, unless having confirmed that no binding occurs
References	•*Grundlagen der Arzneimitteltherapie Ausgabe 2005, Documed* •*Arzneimittel Kompendium der Schweiz, Documed, 2005* •*Taylor and Diers, Abbottt: A textbook for the clinical application of therapeutic drug monitoring 1986* •*Thomson Micromedex® Healthcare series* •*Begg et al., Br J Clin Pharm 39 (1995) 597* •*Touw et al.,Ther Drug Monit 27 (2005) 10* •*Schultz et al., Pharmazie 58 (2003) 447* • *Saunders, J Antimicrob Chemother 36 (1995) 279*