

Tobramycin

General	
• Class of the drug:	Aminoglycoside antibiotics
• Synonym(s):	
• Common trade name(s) in Switzerland:	Obracin®
• Conversion factors:	mg/l x 2.14 = µmol/l µmol/l x 0.467 = mg/l
Clinical pharmacology	
• Indications for TDM:	Individual dose adaptation, suspicion of toxicity, side effects
• Protein binding:	0 - 30% (serum albumin)
• Elimination half-life:	1 – 3 h neonates/ infants: 3 - 8 h (see remarks)
• Volume of distribution:	0.3 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:	<u>Multiple dosing:</u> Peak concentration: 6 – 10 mg/l (13 – 21 µmol/l) Trough concentration: ≤ 1 mg/l (≤2.1 µmol/l) <u>Once-daily dosing:</u> Trough concentration: ≤ 0.5 mg/l (≤ 1.1 µmol/l)
• Potentially toxic concentration:	<u>Multiple Dosing:</u> Peak concentration: > 12 mg/l (26 µmol/l) Trough concentration: > 2 mg/l (4 µmol/l) <u>Once-daily dosing:</u> Trough concentration: > 0.5 mg/l (> 1.1 µmol/l)
Pre-analytics	
• Time to steady-state since beginning of treatment or change of posology:	Steady-state is generally achieved after 3 doses for multiple dosing

<ul style="list-style-type: none"> • Time for blood sampling: 	Peak: one hour after beginning of infusion Trough: within 30 minutes of next dose Once-daily dosing: trough level only
<ul style="list-style-type: none"> • Type(s) of sample: 	Serum or plasma
<ul style="list-style-type: none"> • Stability: 	1 week at 4°C When combined therapy with penicillines and/or cephalosporines: in vitro inactivation →freeze sample
Analytics	
<ul style="list-style-type: none"> • Position(s) in the analysis list/Method: 	8628.01 Immunological
Remarks	<ul style="list-style-type: none"> • Elimination is strongly dependent on renal function • Avoid gel tubes if possible, unless having confirmed that no binding occurs
References	<ul style="list-style-type: none"> • <i>Grundlagen der Arzneimitteltherapie Ausgabe 2005, Documed</i> • <i>Arzneimittel Kompendium der Schweiz, Documed, 2005</i> • <i>Taylor and Diers, Abbott: A textbook for the clinical application of therapeutic drug monitoring 1986</i> • <i>Thomson Micromedex® Healthcare series</i> • <i>Begg et al., Br J Clin Pharm 39 (1995) 597</i> • <i>Touw et al., Ther Drug Monit 27 (2005) 10</i>