

**North-West England Regional Clinical Biochemistry Group**  
**Recommendations for Reporting Concentrations of Commonly Requested Drugs**

**DRAFT 2, 9th January 2007**

DRUG	UNITS	Decimal Places	Target Range* (trough)		Concern Level	CONVERSION FACTOR	NOTES
			Lower Limit	Upper Limit			
Carbamazepine	mg/L	1	4.0	10.0	25.0	$\mu\text{mol/L} \times 0.236 = \text{mg/L}$	severe toxicity likely if level >40.0 mg/L
Ciclosporin A (trough)	$\mu\text{g/L}$	0	depends on indication		400	not applicable	trough concern level is for renal transplant
Ciclosporin A (C2)	$\mu\text{g/L}$	0	depends on indication		2000	not applicable	C2 = 2 hour post dose concentration
Digoxin	$\mu\text{g/L}$	2	1.00	2.00	3.00	$\text{nmol/L} \times 0.781 = \mu\text{g/L}$	ther.range applies $\geq 6$ hours post dose; desirable to interpret with potassium result
Lamotrigine	mg/L	1	3.0	15.0	30.0	$\mu\text{mol/L} \times 0.256 = \text{mg/L}$	"therapeutic range" not well defined
Lithium	mmol/L	2	0.40	1.00	1.40	$\text{mg/L} \times 0.144 = \text{mmol/L}$	ther.range applies at 12 hours post dose; severe toxicity likely if level >2.00 mmol/L; adjustment factor needed for Ortho Vitros
Paracetamol	mg/L	0	not applicable	not applicable	see notes	$\text{mmol/L} \times 151 = \text{mg/L}$	Refer to BNF diagram post overdose; usual concern levels (lower if high risk) in mg/L: 200 @ 4 h, 100 @ 8 h, 50 @ 12 h
Phenobarbital	mg/L	1	10.0	30.0	75.0	$\mu\text{mol/L} \times 0.232 = \text{mg/L}$	ther.range ill-defined due to "tolerance"
Phenytoin	mg/L	1	8.0	15.0	20.0	$\mu\text{mol/L} \times 0.252 = \text{mg/L}$	lower levels $\geq 5.0$ mg/L may be effective; severe toxicity likely if level >40.0 mg/L
Salicylate	mg/L	0	not applicable	not applicable	350	$\text{mmol/L} \times 138 = \text{mg/L}$	concern level 280 mg/L if age <5 years; severe toxicity likely if level >700 mg/L
Tacrolimus	$\mu\text{g/L}$	1	depends on indication		25.0	not applicable	trough concern level is for renal transplant
Theophylline	mg/L	1	10.0	20.0	20.0	$\mu\text{mol/L} \times 0.180 = \text{mg/L}$	lower levels $\geq 5.0$ mg/L may be effective; concern level 14.0 mg/L if age <3 months; severe toxicity likely if level >60.0 mg/L
Valproate	mg/L	0	50	100	[200]	$\mu\text{mol/L} \times 0.144 = \text{mg/L}$	"therapeutic range" not well defined

**References:**

Laboratory analyses for poisoned patients: joint position paper  
National Poisons Information Service and Association of Clinical Biochemists  
Ann Clin Biochem 2002; **39**: 328-339

Consensus Meeting on Units for Reporting Drug Concentrations  
ACB News October 2006; **522**: 14-15.

TOXBASE (National Poisons Information Service): Accessed via website <http://www.spib.axl.co.uk/> on 9th January 2006