

APPENDICES

APPENDIX A. Therapeutic Ranges of Drugs in Traditional and SI Units^a

DRUG	TRADITIONAL RANGE	CONVERSION FACTOR ^b	SI RANGE
Acetaminophen	75 mg/dL toxic	66.16	7330 μmol/L
N-acetylprocainamide	4–10 mg/L	3.606	14–36 μmol/L
Amikacin	20–30 mcg/mL	1.708	34–51 μmol/L
Amiodarone	0.5–2.5 mcg/mL	1.55	0.8–3.9 μmol/L
Amitriptyline	120–250 ng/mL	3.605	433–901 nmol/L
Carbamazepine	4–12 mg/L	4.23	17–51 μmol/L
Chlordiazepoxide	0.5–5 mg/L	3.336	2–17 μmol/L
Chlorpromazine	50–300 ng/mL	3.136	150–950 nmol/L
Chlorpropamide	75–250 mcg/mL	3.613	270–900 μmol/L
Clonazepam	10–50 ng/mL	0.317	3.2–15.9 nmol/L
Clozapine	200–350 ng/mL	0.003	0.6–1 μmol/L
Cyclosporine	100–400 ng/mL ^c	0.832	83–333 nmol/L
Desipramine	100–160 ng/mL	3.754	375–600 nmol/L
Diazepam	100–1000 ng/mL	0.0035	0.35–3.5 μmol/L
Digoxin	0.9–2.2 ng/mL	1.281	1.2–2.8 nmol/L
Disopyramide	2–6 mg/L	2.946	6–18 μmol/L
Doxepin	50–200 ng/mL	3.579	180–720 nmol/L
Ethosuximide	40–100 mg/L	7.084	280–710 μmol/L
Fluoxetine	200–1100 ng/mL	0.00323	0.65–3.56 μmol/L
Gentamicin	6–10 mcg/mL	2.09	12.5–21 μmol/L
Glutethimide	>20 mg/L toxic	4.603	>92 μmol/L toxic
Gold	<10 mcg/L	50.77	<508 nmol/L
Haloperidol	5–15 ng/mL	2.66	13–40 nmol/L
Imipramine	200–250 ng/mL	3.566	710–900 nmol/L
Isoniazid	>3 mg/L toxic	7.291	>22 μmol/L toxic
Lidocaine	1–5 mg/L	4.267	5–22 μmol/L
Lithium	0.5–1.5 mEq/L	1	0.5–1.5 mmol/L
Meperidine	400–700 ng/mL	4.043	1617–2830 nmol/L
Methotrexate	>2.3 mg/L toxic	2.2	>5 μmol/L toxic
Nortriptyline	50–150 ng/mL	3.797	190–570 nmol/L
Pentobarbital	1–5 mcg/mL	4.439	4–22 μmol/L
Phenobarbital	15–40 mg/L	4.306	65–172 μmol/L
Phenytoin	10–20 mg/L	3.964	40–80 μmol/L
Primidone	4–12 mg/L	4.582	18–55 μmol/L
Procainamide	4–8 mg/L	4.249	17–34 μmol/L
Propoxyphene	>500 ng/mL toxic	2.946	>1500 ng/mL
Propranolol	50–200 ng/mL	3.856	190–770 nmol/L
Protriptyline	70–250 mcg/dL	3.787	265–947 nmol/L

(continued)

APPENDIX A. Therapeutic Ranges of Drugs in Traditional and SI Units^{a, c}, cont'd

DRUG	TRADITIONAL RANGE	CONVERSION FACTOR ^b	SI RANGE
Quinidine	2–6 mg/L	3.082	5–18 $\mu\text{mol/L}$
Salicylate (acid)	150–300 mcg/mL	7.24	1086–2172 $\mu\text{mol/L}$
Theophylline	10–20 mg/L	5.55	55–110 $\mu\text{mol/L}$
Tobramycin	5–10 mcg/mL	2.139	10.7–21 $\mu\text{mol/L}$
Tocainide	4–10 mcg/mL	5.201	21–52 $\mu\text{mol/L}$
Valproic acid	50–100 mg/L	6.934	350–700 $\mu\text{mol/L}$
Vancomycin	20–40 mcg/mL	0.69	14–28 $\mu\text{mol/L}$

^aAlso see Table 5-3 in Chapter 5.^bTraditional units are multiplied by conversion factor to get SI units.^cWhole blood assay.**APPENDIX B. Nondrug Reference Ranges for Common Laboratory Tests in Traditional and SI Units^{a, b}**

LABORATORY TEST	REFERENCE RANGE TRADITIONAL UNITS	CONVERSION FACTOR	REFERENCE RANGE SI UNITS	COMMENT
Alanine aminotransferase (ALT)	0–30 IU/L	0.01667	0–0.5 $\mu\text{kat/L}$	SGPT
Albumin	3.5–5 g/dL	10	35–50 g/L	
Alkaline phosphatase	30–120 units/L	0.0167	0.5–2 $\mu\text{kat/L}$	
Ammonia (as nitrogen)	15–45 mcg/dL	0.714	11–32 $\mu\text{mol/L}$	
Aspartate aminotransferase (AST)	8–42 IU/L	0.01667	0.133–0.7 $\mu\text{kat/L}$	SGOT
Bilirubin (direct)	0.1–0.3 mg/dL	17.1	1.7–5 $\mu\text{mol/L}$	
Bilirubin (total)	0.3–1 mg/dL	17.1	5–17 $\mu\text{mol/L}$	
Calcium	8.5–10.8 mg/dL	0.25	2.1–2.7 mmol/L	
Carbon dioxide (CO ₂)	24–30 mEq/L	1	24–30 mmol/L	Serum bicarbonate
Chloride	96–106 mEq/L	1	96–106 mmol/L	
Cholesterol (HDL)	>40 mg/dL	0.026	>1.05 mmol/L	Desirable
Cholesterol (LDL)	<130 mg/dL	0.026	<3.36 mmol/L	Desirable
Creatine kinase (CK)	25–90 IU/L (males)	0.01667	0.42–1.5 $\mu\text{kat/L}$	Males
	10–70 IU/L (females)		0.17–1.17 $\mu\text{kat/L}$	Females
Creatinine, serum (SCr)	0.7–1.5 mg/dL	88.4	62–133 $\mu\text{mol/L}$	Adults
Creatinine clearance (CrCl)	90–140 mL/min/1.73 m ²	0.017	1.53–2.38 mL/sec/1.73 m ²	
Folic acid	3–16 ng/mL	2.266	7–36 nmol/L	
γ -glutamyl transpeptidase (GGT/GGTP)	0–30 units/L (but varies)	0.01667	0–0.5 $\mu\text{kat/L}$ (but varies)	GGT/GGTP
Glucose (fasting)	70–110 mg/dL	0.056	3.9–6.1 mmol/L	Fasting
Hemoglobin (Hgb)	14–18 g/dL (males)	0.622	8.7–11.2 mmol/L	Males
	12–16 g/dL (females)	0.622	7.4–9.9 mmol/L	Females
		10	140–180 g/L	Males
		10	120–140 g/L	Females
Iron	50–150 mcg/dL	0.179	9–26.9 $\mu\text{mol/L}$	
Lactate (arterial), serum	0.5–2 mEq/L	1	0.5–2 mmol/L	
Lactate (venous), serum	0.5–1.5 mEq/L	1	0.5–1.5 mmol/L	Lactic acid
Lactate dehydrogenase (LDH)	100–210 IU/L	0.01667	1667–350 nmol/L, 1.7–3.2 $\mu\text{kat/L}$	LDH
Magnesium	1.5–2.2 mEq/L	0.5	0.75–1.1 mmol/L	
5' nucleotidase	1–11 units/L (but varies)	0.01667	0.02–0.18 $\mu\text{kat/L}$ (but varies)	