

RCPA Allowable Limits of Performance for Biochemistry

Royal College of Pathologists of Australasia Analytical Quality Requirements

Alcohol/Ammonia		
Test or Analyte	Lower Goal	Upper Goal
Alcohol	$\pm 2.2 \text{ mmol/L} \leq 21.7 \text{ mmol/L}$	$\pm 10\% > 21.7 \text{ mmol/L}$
Ammonia	$\pm 3 \text{ umol/L} \leq 30 \text{ umol/L}$	$\pm 10\% > 30 \text{ umol/L}$

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Note: Analytical Quality Requirements are a plus/minus percentage. Some browsers may not display the plus/minus character (it should appear right here, \pm . If it does not, your browser does not support this character).

Antibiotics		
Test or Analyte	Lower Goal	Upper Goal
Amikacin	$\pm 2.0 \text{ mg/L} \leq 20.0 \text{ mg/L}$	$\pm 10\% > 20.0 \text{ mg/L}$
Gentamicin	$\pm 0.5 \text{ mg/L} \leq 5.0 \text{ mg/L}$	$\pm 10\% > 5.0 \text{ mg/L}$
Tobramycin	$\pm 0.5 \text{ mg/L} \leq 5.0 \text{ mg/L}$	$\pm 10\% > 5.0 \text{ mg/L}$
Vancomycin	$\pm 2.0 \text{ mg/L} \leq 20.0 \text{ mg/L}$	$\pm 10\% > 20.0 \text{ mg/L}$

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Biogenic Amines		
Test or Analyte	Lower Goal	Upper Goal
Adrenaline	$\pm 50 \text{ nmol/day} \leq 150 \text{ nmol/day}$	$\pm 33\% > 150 \text{ nmol/day}$
Dopamine	$\pm 0.25 \text{ umol/day} \leq 1.0 \text{ umol/day}$	$\pm 25\% > 1.0 \text{ umol/day}$
5HIAA	$\pm 20 \text{ umol/day} \leq 100 \text{ umol/day}$	$\pm 20\% > 100 \text{ umol/day}$

HMMA	$\pm 20 \text{ umol/day} \leq 100 \text{ umol/day}$	$\pm 20\% > 100 \text{ umol/day}$
HVA	$\pm 8 \text{ umol/day} \leq 32 \text{ umol/day}$	$\pm 25\% > 32 \text{ umol/day}$
Metanephrine	$\pm 0.5 \text{ umol/day} \leq 1.5 \text{ umol/day}$	$\pm 33\% > 1.5 \text{ umol/day}$
Noradrenaline	$\pm 50 \text{ nmol/day} \leq 500 \text{ nmol/day}$	$\pm 10\% > 500 \text{ nmol/day}$
Normetanephrine	$\pm 1.0 \text{ umol/day} \leq 3.0 \text{ umol/day}$	$\pm 33\% > 3.0 \text{ umol/day}$
Serotonin	$\pm 0.3 \text{ umol/day} \leq 1.0 \text{ umol/day}$	$\pm 30\% > 1.0 \text{ umol/day}$

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Blood Gas		
Test or Analyte	Lower Goal	Upper Goal
Chloride	$\pm 3.0 \text{ mmol/L}$	
Glucose	$\pm 1.0 \text{ mmol/day} \leq 10.0 \text{ mmol/day}$	$\pm 10\% > 10.0 \text{ mmol/day}$
Ionised Calcium	$\pm 0.05 \text{ mmol/L}$	
Lactate	$\pm 1.0 \text{ mmol/day} \leq 10.0 \text{ mmol/day}$	$\pm 10\% > 10.0 \text{ mmol/day}$
pH	± 0.04	
pCO ₂	$\pm 2.0 \text{ mm Hg} \leq 25.0 \text{ mm Hg}$	$\pm 8\% > 25.0 \text{ mm Hg}$
pO ₂	$\pm 5 \text{ mm Hg} \leq 100 \text{ mm Hg}$	$\pm 5\% > 100 \text{ mm Hg}$
Potassium	$\pm 0.2 \text{ mmol/L}$	
Sodium	$\pm 3.0 \text{ mmol/L}$	

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Co-oximetry		
Test or Analyte	Lower Goal	Upper Goal
Hemoglobin concentration	$\pm 3 \text{ g/L} \leq 100 \text{ g/L}$	$\pm 3\% > 100 \text{ g/L}$
Fractional Oxyhemoglobin	$\pm 3 \leq 75\%$	$\pm 4\% > 75\%$
Fractional Carboxyhemoglobin	$\pm 2.0\%$	

Fractional Methemoglobin	$\pm 1.0 \leq 10\%$	$\pm 10\% > 100\%$
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CSF		
Test or Analyte	Lower Goal	Upper Goal
Albumin	$\pm 0.10 \text{ g/L} \leq 1.0 \text{ g/L}$	$\pm 10\% > 1.0 \text{ g/L}$
Glucose	$\pm 1.0 \text{ mmol/L} \leq 10 \text{ mmol/L}$	$\pm 10\% > 10.0 \text{ mmol/L}$
Immunoglobulin G	$\pm 0.1 \text{ g/L} \leq 1.0 \text{ g/L}$	$\pm 10\% > 1.0 \text{ g/L}$
Lactate	$\pm 0.1 \text{ mmol/L} \leq 1.0 \text{ mmol/L}$	$\pm 10\% > 1.0 \text{ mmol/L}$
Total Protein	$\pm 0.1 \text{ g/L} \leq 1.0 \text{ g/L}$	$\pm 10\% > 1.0 \text{ g/L}$

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Endocrine		
Test or Analyte	Lower Goal	Upper Goal
AFP	$\pm 5 \text{ kIU/L} \leq 25 \text{ kIU/L}$	$\pm 20\% > 25 \text{ kIU/L}$
Androstenedione	$\pm 2.0 \text{ nmol/L}$	
CA125	$\pm 10 \text{ kU/L} \leq 50 \text{ kU/L}$	$\pm 20\% > 50 \text{ kU/L}$
CEA	$\pm 2.0 \text{ ug/L} \leq 10.0 \text{ ug/L}$	$\pm 20\% > 10 \text{ ug/L}$
Cortisol	$\pm 30 \text{ nmol/L} \leq 200 \text{ nmol/L}$	$\pm 15\% > 200 \text{ nmol/L}$
11-Deoxycortisol	$\pm 30 \text{ nmol/L} \leq 200 \text{ nmol/L}$	$\pm 15\% > 200 \text{ nmol/L}$
DHEA Sulphate	$\pm 1.0 \text{ umol/L} \leq 10 \text{ umol/L}$	$\pm 10\% > 10 \text{ umol/L}$
Ferritin	$\pm 6.0 \text{ ug/L} \leq 40.0 \text{ ug/L}$	$\pm 15\% > 40.0 \text{ ug/L}$
Folate	$\pm 1.0 \text{ umol/day} \leq 1.0 \text{ umol/day}$	$\pm 30\% > 1.0 \text{ umol/day}$
FSH	$\pm 4.0 \text{ IU/L} \leq 20.0 \text{ IU/L}$	$\pm 20\% > 20.0 \text{ IU/L}$
Gastrin	$\pm 25 \text{ pmol/L} \leq 250 \text{ pmol/L}$	$\pm 10\% > 250 \text{ pmol/L}$
Growth Hormone	$\pm 2 \text{ mU/L} \leq 10 \text{ mU/L}$	$\pm 20\% > 10 \text{ mU/L}$

HCG	$\pm 3 \text{ IU/L} \leq 20.0 \text{ IU/L}$	$\pm 15\% > 20.0 \text{ IU/L}$
17-Hydroxyprogesterone	$\pm 3 \text{ nmol/L} \leq 15 \text{ nmol/L}$	$\pm 20\% > 15 \text{ nmol/L}$
IgE	$\pm 4.0 \text{ IU/L} \leq 20.0 \text{ IU/L}$	$\pm 20\% > 20.0 \text{ IU/L}$
Insulin	$\pm 5 \text{ mU/L} \leq 20 \text{ mU/L}$	$\pm 25\% > 20 \text{ mU/L}$
LH	$\pm 2.0 \text{ IU/L} \leq 10.0 \text{ IU/L}$	$\pm 20\% > 10.0 \text{ IU/L}$
Oestradiol	$\pm 100 \text{ pmol/L} \leq 500 \text{ pmol/L}$	$\pm 20\% > 500 \text{ pmol/L}$
Oestriol(total)	$\pm 20 \text{ nmol/L} \leq 200 \text{ nmol/L}$	$\pm 10\% > 200 \text{ nmol/L}$
Oestriol(unconjugated)	$\pm 5 \text{ nmol/L} \leq 25 \text{ nmol/L}$	$\pm 20\% > 25 \text{ nmol/L}$
Progesterone	$\pm 2 \text{ nmol/L} \leq 10 \text{ nmol/L}$	$\pm 25\% > 10 \text{ nmol/L}$
Prolactin	$\pm 20 \text{ mIU/L} \leq 100 \text{ mIU/L}$	$\pm 20\% > 100 \text{ mIU/L}$
SHBG	$\pm 5 \text{ nmol/L} \leq 50 \text{ nmol/L}$	$\pm 10\% > 50 \text{ nmol/L}$
Testosterone	$\pm 0.5 \text{ nmol/L} \leq 2.5 \text{ nmol/L}$	$\pm 20\% > 2.5 \text{ nmol/L}$
TSH	$\pm 0.6 \text{ mU/L} \leq 4.0 \text{ mU/L}$	$\pm 15\% > 4.0 \text{ mU/L}$
Free T3	$\pm 3 \text{ pmol/L}$	
Free T4	$\pm 1.5 \text{ pmol/L} \leq 10 \text{ pmol/L}$	$\pm 15\% > 10 \text{ pmol/L}$
Total T3	$\pm 0.3 \text{ nmol/L} \leq 1.5 \text{ nmol/L}$	$\pm 20\% > 1.5 \text{ nmol/L}$
Total T4	$\pm 8 \text{ nmol/L} \leq 50 \text{ nmol/L}$	$\pm 15\% > 50 \text{ nmol/L}$
Vitamin B12	$\pm 20 \text{ pmol/L} \leq 100 \text{ pmol/L}$	$\pm 20\% > 100 \text{ pmol/L}$
Vitamin D3	$\pm 5 \text{ nmol/L} \leq 20 \text{ nmol/L}$	$\pm 15 > 20 \text{ nmol/L}$
Total PSA	$\pm 1.5 \text{ ug/L} \leq 10.0 \text{ ug/L}$	$\pm 15\% > 10.0 \text{ ug/L}$
Free PSA	$\pm 1.5 \text{ ug/L} \leq 10.0 \text{ ug/L}$	$\pm 15\% > 10.0 \text{ ug/L}$
Aldosterone	$\pm 75.0 \text{ pmol/L} \leq 500 \text{ pmol/L}$	$\pm 15\% > 500 \text{ pmol/L}$
PTH	$\pm 2.5 \text{ pmol/L} \leq 10.0 \text{ pmol/L}$	$\pm 25\% > 10 \text{ pmol/L}$
Plasma Renin Activity	$\pm 1.0 \text{ ng/mL/hr}; \leq 4.0 \text{ ng/mL/hr}$	$\pm 25\% > 4.0 \text{ ng/mL/hr}$
Active Renin	$\pm 1.0 \text{ uU/mL} \leq 4.0 \text{ uU/mL}$	$\pm 25\% > 4.0 \text{ uU/mL}$

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General Serum Chemistry		
Test or Analyte	Lower Goal	Upper Goal
Acid Phos(Total)	$\pm 1.5 \text{ U/L} \ \& \ \text{ug/L} \leq 10 \text{ U/L} \ \& \ \text{ug/L}$	$\pm 15\% > 25 \text{ U/L} \ \& \ \text{ug/L}$

Acid Phos(Pros)	$\pm 1.5 \text{ U/L} \ \& \ \mu\text{g/L} \leq 10 \text{ U/L} \ \& \ \mu\text{g/L}$	$\pm 15\% > 25 \text{ U/L} \ \& \ \mu\text{g/L}$
Albumin	$\pm 2.0 \text{ g/L} \leq 33.0 \text{ g/L}$	$\pm 6\% > 20 \text{ g/L}$
Alkaline Phosphatase	$\pm 15 \text{ U/L} \leq 125 \text{ U/L}$	$\pm 12\% > 100 \text{ U/L}$
ALT	$\pm 5 \text{ U/L} \leq 40 \text{ U/L}$	$\pm 12\% > 40 \text{ U/L}$
Amylase	$\pm 10 \text{ U/L} \leq 100 \text{ U/L}$	$\pm 10\% > 100 \text{ U/L}$
AST	$\pm 5 \text{ U/L} \leq 40 \text{ U/L}$	$\pm 12\% > 60 \text{ U/L}$
Bicarbonate	$\pm 2.0 \text{ mmol/L} \leq 20 \text{ mmol/L}$	$\pm 10\% > 20.0 \text{ mmol/L}$
Bilirubin - Total	$\pm 3 \text{ umol/L} \leq 25 \text{ umol/L}$	$\pm 12\% > 25 \text{ umol/L}$
Bilirubin Conjugated	$\pm 3 \text{ umol/L} \leq 15 \text{ umol/L}$	$\pm 20\% > 15 \text{ umol/L}$
Calcium	$\pm 0.10 \text{ mmol/L} \leq 2.5 \text{ mmol/L}$	$\pm 4\% > 2.5 \text{ mmol/L}$
Chloride	$\pm 3.0 \text{ mmol/L} \leq 100 \text{ mmol/L}$	$\pm 3\% > 100 \text{ mmol/L}$
Cholesterol	$\pm 0.3 \text{ mmol/L} \leq 5 \text{ mmol/L}$	$\pm 6\% > 5 \text{ mmol/L}$
Creatine Kinase	$\pm 15 \text{ U/L} \leq 125 \text{ U/L}$	$\pm 12\% > 125 \text{ U/L}$
CK-MB	$\pm 3 \text{ U/L} \ \& \ \mu\text{g/L} \leq 15 \text{ U/L} \ \& \ \mu\text{g/L}$	$\pm 20\% > 15 \text{ U/L} \ \& \ \mu\text{g/L}$
Cortisol	$\pm 30 \text{ nmol/L} \leq 150 \text{ nmol/L}$	$\pm 15\% > 150 \text{ nmol/L}$
Creatinine	$\pm 8 \text{ umol/L} \leq 100 \text{ umol/L}$	$\pm 8\% > 100 \text{ umol/L}$
Ferritin	$\pm 4.0 \text{ ug/L} \leq 27.0 \text{ ug/L}$	$\pm 15\% > 27 \text{ ug/L}$
Fructosamine	$\pm 15 \text{ umol/L} \leq 250 \text{ umol/L}$	$\pm 6\% > 250 \text{ umol/L}$
Glucose	$\pm 0.4 \text{ mmol/L} \leq 5.0 \text{ mmol/L}$	$\pm 8\% > 5.0 \text{ mmol/L}$
GGT	$\pm 5 \text{ U/L} \leq 40 \text{ U/L}$	$\pm 12\% > 40 \text{ U/L}$
hCG-quantitative	$\pm 3.0 \text{ IU/L} \leq 20 \text{ IU/L}$	$\pm 15\% > 20 \text{ IU/L}$
hCG-qualitative	neg $\leq 20 \text{ IU/L}$	pos $> 30 \text{ IU/L}$
HDL cholesterol	$\pm 0.1 \text{ mmol/L} \leq 0.8 \text{ mmol/L}$	$\pm 12\% > 0.8 \text{ mmol/L}$
Iron	$\pm 3 \text{ umol/L} \leq 25 \text{ umol/L}$	$\pm 12\% > 25 \text{ umol/L}$
Lactate Dehydrogenase	$\pm 20 \text{ U/L} \leq 250 \text{ U/L}$	$\pm 8\% > 250 \text{ U/L}$
Lactate	$\pm 0.5 \text{ mmol/L} \leq 4 \text{ mmol/L}$	$\pm 12\% > 4 \text{ mmol/L}$
Lipase	$\pm 12 \text{ U/L} \leq 60 \text{ U/L}$	$\pm 20\% > 60 \text{ U/L}$
Lithium	$\pm 0.2 \text{ mmol/L}$	
Magnesium	$\pm 0.1 \text{ mmol/L} \leq 1.25 \text{ mmol/L}$	$\pm 8\% > 1.25 \text{ mmol/L}$
Osmolality	$\pm 8 \text{ mmol/kg} \leq 266 \text{ mmol/kg}$	$\pm 3\% > 266 \text{ mmol/kg}$
Phosphate	$\pm 0.06 \text{ mmol/L} \leq 0.75 \text{ mmol/L}$	$\pm 8\% > 0.75 \text{ mmol/L}$
Potassium	$\pm 0.2 \text{ mmol/L} \leq 4.0 \text{ mmol/L}$	$\pm 5\% > 4.0 \text{ mmol/L}$
Protein (Total)	$\pm 3.0 \text{ g/L} \leq 60 \text{ g/L}$	$\pm 5\% > 60 \text{ g/L}$

Sodium	$\pm 3 \text{ mmol/L} \leq 150 \text{ mmol/L}$	$\pm 2\% > 150 \text{ mmol/L}$
Total T3	$\pm 0.2 \text{ nmol/L} \leq 1.3 \text{ nmol/L}$	$\pm 15\% > 1.3 \text{ nmol/L}$
Free T3	$\pm 0.7 \text{ pmol/L} \leq 3.5 \text{ pmol/L}$	$\pm 20\% > 3.5 \text{ pmol/L}$
Free T4	$\pm 1.5 \text{ pmol/L} \leq 12 \text{ pmol/L}$	$\pm 12\% > 12 \text{ pmol/L}$
TSH	$\pm 0.1 \text{ mU/L} \leq 0.5 \text{ mU/L}$	$\pm 20\% > 0.5 \text{ mU/L}$
Thyroxine	$\pm 12 \text{ nmol/L} \leq 120 \text{ nmol/L}$	$\pm 10\% > 120 \text{ nmol/L}$
TIBC	$\pm 4 \text{ umol/L} \leq 50 \text{ umol/L}$	$\pm 8\% > 50 \text{ umol/L}$
Transferrin	$\pm 0.2 \text{ g/L} \leq 2.5 \text{ g/L}$	$\pm 8\% > 2.5 \text{ g/L}$
Triglyceride	$\pm 0.2 \text{ mmol/L} \leq 1.6 \text{ mmol/L}$	$\pm 12\% > 1.6 \text{ mmol/L}$
Troponin I	$\pm 0.2 \text{ ng/mL} \leq 2.0 \text{ ng/mL}$	$\pm 10\% > 2.0 \text{ ng/mL}$
Troponin T	$\pm 0.1 \text{ ng/mL} \leq 1.0 \text{ ng/mL}$	$\pm 10\% > 1.0 \text{ ng/mL}$
Urate	$\pm 0.03 \text{ mmol/L} \leq 0.38 \text{ mmol/L}$	$\pm 8\% > 0.38 \text{ mmol/L}$
Urea	$\pm 0.5 \text{ mmol/L} \leq 4.0 \text{ mmol/L}$	$\pm 12\% > 4.0 \text{ mmol/L}$

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General Therapeutic Drugs		
Test or Analyte	Lower Goal	Upper Goal
Carbamazepine	$\pm 2.0 \text{ umol/L} \leq 20.0 \text{ umol/L}$	$\pm 10\% > 20.0 \text{ umol/L}$
Digoxin	$\pm 0.2 \text{ nmol/L} \leq 2.0 \text{ nmol/L}$	$\pm 10\% > 2.0 \text{ nmol/L}$
Gentamicin	$\pm 0.5 \text{ mg/L} \leq 5.0 \text{ mg/L}$	$\pm 10\% > 5.0 \text{ mg/L}$
Paracetamol	$\pm 20 \text{ umol/L} \leq 200 \text{ umol/L}$	$\pm 10\% > 200 \text{ umol/L}$
Phenobarbitone	$\pm 3.0 \text{ umol/L} \leq 30.0 \text{ umol/L}$	$\pm 10\% > 30.0 \text{ umol/L}$
Phenytoin	$\pm 3.0 \text{ umol/L} \leq 30.0 \text{ umol/L}$	$\pm 10\% > 30.0 \text{ umol/L}$
Quinidine	$\pm 2.0 \text{ umol/L} \leq 20.0 \text{ umol/L}$	$\pm 10\% > 20.0 \text{ umol/L}$
Salicylate	$\pm 0.1 \text{ mmol/L} \leq 1.0 \text{ mmol/L}$	$\pm 10\% > 1.0 \text{ mmol/L}$
Theophylline	$\pm 3.0 \text{ umol/L} \leq 30.0 \text{ umol/L}$	$\pm 10\% > 30.0 \text{ umol/L}$
Valproate	$\pm 25 \text{ umol/L} \leq 250 \text{ umol/L}$	$\pm 10\% > 250 \text{ umol/L}$
Vancomycin	$\pm 2.0 \text{ mg/L} \leq 20.0 \text{ mg/L}$	$\pm 10\% > 20.0 \text{ mg/L}$

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Glycohaemoglobin		
Test or Analyte	Lower Goal	Upper Goal
Hemoglobin A1C	$\pm 0.5 \leq 10\%$	$\pm 5\% > 10\%$

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IGF-1 / C Peptide		
Test or Analyte	Lower Goal	Upper Goal
IGF-1	$\pm 3 \text{ nmol/L} \leq 20.0 \text{ nmol/L}$	$\pm 15\% > 20.0 \text{ nmol/L}$
C Peptide	$\pm 1.0 \text{ nmol/L} \leq 10 \text{ nmol/L}$	$\pm 10\% > 10 \text{ nmol/L}$

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Near Patient Testing		
Test or Analyte	Lower Goal	Upper Goal
Albumin	$\pm 2.0 \text{ g/L} \leq 20.0 \text{ g/L}$	$\pm 10\% > 20.0 \text{ g/L}$
Alkaline Phosphatase	$\pm 15 \text{ U/L} \leq 100 \text{ U/L}$	$\pm 15\% > 100 \text{ U/L}$
ALT	$\pm 8 \text{ U/L} \leq 60 \text{ U/L}$	$\pm 15\% > 60 \text{ U/L}$
Amylase	$\pm 15 \text{ U/L} \leq 100 \text{ U/L}$	$\pm 15\% > 100 \text{ U/L}$
AST	$\pm 8 \text{ U/L} \leq 60 \text{ U/L}$	$\pm 15\% > 60 \text{ U/L}$
Bicarbonate	$\pm 2.0 \text{ mmol/L} \leq 20.0 \text{ mmol/L}$	$\pm 10\% > 20.0 \text{ mmol/L}$
Bilirubin	$\pm 5.0 \text{ umol/L} \leq 50.0 \text{ umol/L}$	$\pm 10\% > 50.0 \text{ umol/L}$
Calcium	$\pm 0.1 \text{ mmol/L}$	
Chloride	$\pm 3 \text{ mmol/L}$	
Cholesterol	$\pm 0.50 \text{ mmol/L} \leq 10.0 \text{ mmol/L}$	$\pm 5\% > 10.0 \text{ mmol/L}$

Creatinine Kinase	$\pm 15 \text{ U/L} \leq 100 \text{ U/L}$	$\pm 15\% > 100 \text{ U/L}$
Creatinine	$\pm 0.01 \text{ mmol/L} \leq 0.1 \text{ mmol/L}$	$\pm 10\% > 0.1 \text{ mmol/L}$
Glucose	$\pm 0.5 \text{ mmol/L} \leq 5.0 \text{ mmol/L}$	$\pm 10\% > 0.1 \text{ mmol/L}$
Creatinine	$\pm 0.01 \text{ mmol/L} \leq 0.1 \text{ mmol/L}$	$\pm 10\% > 5.0 \text{ mmol/L}$
GGT	$\pm 8 \text{ U/L} \leq 60 \text{ U/L}$	$\pm 15\% > 60 \text{ U/L}$
hCG-quantitative	$\pm 3 \text{ IU/L} \leq 20 \text{ IU/L}$	$\pm 15\% > 20 \text{ IU/L}$
hCG-qualitative	neg $\leq 20 \text{ IU/L}$	pos $> 30 \text{ IU/L}$
HDL Cholesterol	$\pm 0.2 \text{ mmol/L} \leq 2.0 \text{ mmol/L}$	$\pm 10\% > 2.0 \text{ mmol/L}$
Lactate Dehydrogenase	$\pm 30 \text{ U/L} \leq 200 \text{ U/L}$	$\pm 15\% > 200 \text{ U/L}$
Magnesium	$\pm 0.12 \text{ mmol/L}$	
Potassium	$\pm 2.0 \text{ mmol/L}$	
Protein (total)	$\pm 5.0 \text{ g/L}$	
Sodium	$\pm 3.0 \text{ mmol/L}$	
Triglyceride	$\pm 0.2 \text{ mmol/L} \leq 2.0 \text{ mmol/L}$	$\pm 10\% > 2.0 \text{ mmol/L}$
Urate	$\pm 0.050 \text{ mmol/L}$	
Urea	$\pm 1.0 \text{ mmol/L} \leq 10.0 \text{ mmol/L}$	$\pm 10\% > 10.0 \text{ mmol/L}$

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Neonatal Bilirubin		
Test or Analyte	Lower Goal	Upper Goal
Total Bilirubin	$\pm 15 \text{ umol/L} \leq 150 \text{ umol/L}$	$\pm 10\% > 150 \text{ umol/L}$
Conjugated Bilirubin	$\pm 10 \text{ umol/L} \leq 50 \text{ umol/L}$	$\pm 20\% > 50 \text{ umol/L}$

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Porphyrins		
Test or Analyte	Lower Goal	Upper Goal

Urine ALA	$\pm 5 \text{ umol/L} \leq 20 \text{ umol/L}$	$\pm 25\% > 20.0 \text{ umol/L}$
Urine Porphobilinogen (Quantitative)	$\pm 5 \text{ umol/L} \leq 25 \text{ umol/L}$	$\pm 20\% > 25 \text{ umol/L}$
Urine Porphobilinogen Qualitative	neg $\leq 10 \text{ umol/L}$	+ 10-50 umol/L ++ 51-100 umol/L +++ > 100 umol/L
Urine Total Porphyrin	$\pm 15 \text{ nmol/L} \leq 100 \text{ nmol/L}$	$\pm 15\% > 100 \text{ nmol/L}$
Faecal Percent Dry Weight	$\pm 1 \leq 10\%$	$\pm 10\% > 10\%$
Faecal Total Porphyrin	$\pm 15 \text{ umol/kg} \leq 100 \text{ umol/kg}$	$\pm 15\% > 100 \text{ umol/kg}$
Plasma Total Porphyrin	$\pm 3 \text{ nmol/L} \leq 20 \text{ nmol/L}$	$\pm 15\% > 20 \text{ nmol/L}$
RBC Total Porphyrin	$\pm 0.3 \text{ umol/L rc} \leq 2.0 \text{ umol/L rc}$	$\pm 15\% > 2.0 \text{ umol/L rc}$

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Special lipids		
Test or Analyte	Lower Goal	Upper Goal
Cholesterol	$\pm 0.50 \text{ mmol/L} \leq 10.0 \text{ mmol/L}$	$\pm 5\% > 10.0 \text{ mmol/L}$
HDL Cholesterol	$\pm 0.20 \text{ mmol/L} \leq 2.0 \text{ mmol/L}$	$\pm 10\% > 2.0 \text{ mmol/L}$
Triglyceride	$\pm 0.20 \text{ mmol/L} \leq 2.0 \text{ mmol/L}$	$\pm 10\% > 2.0 \text{ mmol/L}$
Apolipoprotein A1	$\pm 0.2 \text{ g/L} \leq 2.0 \text{ g/L}$	$\pm 10\% > 2.0 \text{ g/L}$
Apolipoprotein B	$\pm 0.2 \text{ g/L} \leq 2.0 \text{ g/L}$	$\pm 10\% > 2.0 \text{ g/L}$

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Special Therapeutic Drugs		
Test or Analyte	Lower Goal	Upper Goal
Amiodarone	$\pm 0.2 \text{ umol/L} \leq 2.0 \text{ umol/L}$	$\pm 10\% > 2.0 \text{ umol/L}$
Amitriptyline	$\pm 10 \text{ umol/L} \leq 100 \text{ umol/L}$	$\pm 10\% > 100 \text{ umol/L}$
Disopyramide	$\pm 2.0 \text{ umol/L} \leq 20 \text{ umol/L}$	$\pm 10\% > 20 \text{ umol/L}$

Ethosuximide	$\pm 3 \text{ umol/L} \leq 30 \text{ umol/L}$	$\pm 10\% > 30 \text{ umol/L}$
Lignocaine	$\pm 2.0 \text{ umol/L} \leq 20 \text{ umol/L}$	$\pm 10\% > 20 \text{ umol/L}$
Methotrexate	$\pm 0.1 \text{ umol/L} \leq 1.0 \text{ umol/L}$	$\pm 10\% > 1.0 \text{ umol/L}$
Nortriptyline	$\pm 10 \text{ nmol/L} \leq 100 \text{ nmol/L}$	$\pm 10\% > 100 \text{ nmol/L}$
Quinidine	$\pm 2.0 \text{ umol/L} \leq 20 \text{ umol/L}$	$\pm 10\% > 20 \text{ umol/L}$
Tricyclic Antidepressants	$\pm 10 \text{ nmol/L} \leq 100 \text{ nmol/L}$	$\pm 10\% > 100 \text{ nmol/L}$

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Sweat Electrolytes		
Test or Analyte	Lower Goal	Upper Goal
Sodium	$\pm 2 \text{ mmol/L} \leq 20 \text{ mmol/L}$	$\pm 10\% > 20 \text{ mmol/L}$
Chloride	$\pm 2 \text{ mmol/L} \leq 20 \text{ mmol/L}$	$\pm 10\% > 20 \text{ mmol/L}$
Sweat Conductivity	$\pm 2 \text{ mmol/L} \leq 20 \text{ mmol/L}$	$\pm 10\% > 20 \text{ mmol/L}$

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Tumour Markers		
Test or Analyte	Lower Goal	Upper Goal
ACTH	$\pm 2.0 \text{ pmol/L}; \leq 20 \text{ pmol/L}$	$\pm 10\%; > 20 \text{ pmol/L}$
Alpha-fetoprotein	$\pm 5 \text{ kIU/L}; \leq 25 \text{ kIU/L}$	$\pm 20\% > 25 \text{ kIU/L}$
Calcitonin	$\pm 2 \text{ ng/L} \leq 20 \text{ ng/L}$	$\pm 10\% > 20 \text{ ng/L}$
CEA	$\pm 2.0 \text{ ug/L} \leq 10.0 \text{ ug/L}$	$\pm 20\% > 10.0 \text{ ug/L}$
CA125	$\pm 20 \text{ kU/L} \leq 50 \text{ kU/L}$	$\pm 20\% > 50 \text{ kU/L}$
CA15-3	$\pm 3 \text{ kU/L} \leq 20 \text{ kU/L}$	$\pm 15\% > 20 \text{ kU/L}$
CA19-9	$\pm 3 \text{ kU/L} \leq 20 \text{ kU/L}$	$\pm 15\% > 20 \text{ kU/L}$
hCG	$\pm 3 \text{ IU/L} \leq 20 \text{ IU/L}$	$\pm 15\% > 20 \text{ IU/L}$
Beta-2 Microglobulin	$\pm 0.2 \text{ mg/L} \leq 2.0 \text{ mg/L}$	$\pm 10\% > 2.0 \text{ mg/L}$

NSE	$\pm 2.0 \text{ ug/L} \leq 20 \text{ ug/L}$	$\pm 10\% > 20 \text{ ug/L}$
Prolactin	$\pm 20 \text{ mU/L} \leq 100 \text{ mU/L}$	$\pm 20\% > 100 \text{ mU/L}$
Total PSA	$\pm 1.5 \text{ ug/L} \leq 10.0 \text{ ug/L}$	$\pm 15\% > 10.0 \text{ ug/L}$

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Urine Chemistry		
Test or Analyte	Lower Goal	Upper Goal
Albumin	$\pm 0.1 \text{ g/L} \leq 1.0 \text{ g/L}$	$\pm 10\% > 1.0 \text{ g/L}$
Calcium	$\pm 0.20 \text{ mmol/L}$	
Chloride	$\pm 2.0 \text{ mmol/L} \leq 20.0 \text{ mmol/L}$	$\pm 10\% > 20.0 \text{ mmol/L}$
Creatinine	$\pm 0.5 \text{ mmol/L} \leq 5.0 \text{ mmol/L}$	$\pm 10\% > 5.0 \text{ mmol/L}$
DPD (Total)	$\pm 15 \text{ nmol/L} \leq 80 \text{ nmol/L}$	$\pm 15\% > 80 \text{ nmol/L}$
DPD (Free)	$\pm 15 \text{ nmol/L} \leq 80 \text{ nmol/L}$	$\pm 15\% > 80 \text{ nmol/L}$
Glucose	$\pm 1.0 \text{ mmol/L} \leq 10.0 \text{ mmol/L}$	$\pm 10\% > 10.0 \text{ mmol/L}$
hCG-qualitative	neg $\leq 20 \text{ IU/L}$	pos $> 30 \text{ IU/L}$
hCG-quantitative	$\pm 5 \text{ IU/L} \leq 50 \text{ IU/L}$	$\pm 10\%; > 50 \text{ IU/L}$
Hydroxyproline	$\pm 10 \text{ umol/L} \leq 100 \text{ umol/L}$	$\pm 10\%; > 100 \text{ umol/L}$
Magnesium (serum)	$\pm 0.12 \text{ mmol/L}$	
N-Telopeptides	$\pm 80 \text{ nmolBCE/L} \leq 700 \text{ nmolBCE/L}$	$\pm 10\% > 700 \text{ nmolBCE/L}$
Osmolality	$\pm 6 \text{ mmol/kg} \leq 300 \text{ mmol/kg}$	$\pm 2\% > 300 \text{ mmol/kg}$
Potassium	$\pm 2.0 \text{ mmol/L} \leq 20.0 \text{ mmol/L}$	$\pm 10\% > 20.0 \text{ mmol/L}$
Phosphate	$\pm 2.5 \text{ mmol/L}$	
Sodium	$\pm 2.0 \text{ mmol/L} \leq 20.0 \text{ mmol/L}$	$\pm 10\% > 20.0 \text{ mmol/L}$
Total Protein	$\pm 0.1 \text{ g/L} \leq 1.0 \text{ g/L}$	$\pm 10\% > 1.0 \text{ g/L}$
Urate	$\pm 0.3 \text{ mmol/L}$	
Urea	$\pm 20 \text{ mmol/L} \leq 200 \text{ mmol/L}$	$\pm 10\% > 200 \text{ mmol/L}$

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Urine Pregnancy Testing		
Test or Analyte	Lower Goal	Upper Goal
hCG	neg ≤ 20 IU/L	pos > 30 IU/L

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Vitamins		
Test or Analyte	Lower Goal	Upper Goal
Vitamin A	± 0.3 umol/L ≤ 3.0 umol/L	± 10% > 3.0 umol/L
Vitamin E	± 5.0 umol/L ≤ 50.0 umol/L	± 10% > 50.0 umol/L
Beta Carotene	± 0.2 umol/L ≤ 20.0 umol/L	± 10% > 20.0 umol/L
Total Carotenoids	± 0.4 umol/L ≤ 4.0 umol/L	± 10% > 4.0 umol/L