



Serum Biochemical Analysis Reference Ranges

Clinical Chemistry SI Conversion Factors

Measure	Units	Dog	Measure	Conventional (US) Units	Conversion Factor (x)	SI Units
<i>In Conventional (US) Units</i>			Alkaline phosphatase	IU/L	1	U/L
ALTa	U/L	10–109	ALT	U/L	1	U/L
Amylase	U/L	226–1,063	Albumin	g/dL	10	g/L
Alk phosa	U/L	1–114	Ammonia (NH ₄)	mcg/dL	0.5872	mcmol/L
ASTa	U/L	13–15	Amylase	Somogyi units	1.85	U/L
CKa	U/L	52–368	AST	U/L	1	U/L
GGTa	U/L		Bilirubin	mg/dL	17.1	mcmol/L
LDHa	U/L	0–236	Calcium	mg/dL	0.25	mmol/L
SDHa	U/L		Bicarbonate (HCO ₃)	mEq/L	1	mmol/L
Bicarbonate	mEq/L	17–24	Carbon dioxide	mEq/L	1	mmol/L
Bilirubin	mg/dL	0–0.3	Chloride	mEq/L	1	mmol/L
Calcium	mg/dL	9.1–11.7	Cholesterol	mg/dL	0.026	mmol/L
Chloride	mEq/L	110–124	Copper	mcg/dL	0.16	mcmol/L
Cholesterol	mg/dL	135–278	Cortisol	mcg/dL	27.6	nmol/L
Creatinine	mg/dL	0.5–1.7	CK	IU/L	1	U/L
Glucose	mg/dL	76–119	Creatinine	mg/dL	88.4	mcmol/L
Magnesium	mg/dL	1.6–2.4	Fibrinogen	mg/dL	0.01	g/L
Phosphorus	mg/dL	2.9–5.3	Glucose	mg/dL	0.055	mmol/L
Potassium	mEq/L	3.9–5.1	Iron, binding	mcg/dL	0.179	mcmol/L
Total protein	g/dL	5.4–7.5	Iron, total	mcg/dL	0.179	mcmol/L
Albumin	g/dL	2.3–3.1	Lipase	IU/L	1	U/L
Globulin	g/dL	2.7–4.4	Cherry-Crandall U		278	U/L
Sodium	mEq/L	142–152	Magnesium	mEq/L	0.5	mmol/L
Urea nitrogen	mg/dL	8–28	Osmolality	Osm/kg	1	mmol/L
<i>In SI Units</i>			Phosphorus	mg/dL	0.323	mmol/L
Bicarbonate	mmol/L	17–24	Potassium	mEq/L	1	mmol/L
Bilirubin	mcmol/L	0–5.1	Protein, total	g/dL	10	g/L
Calcium	mmol/L	2.3–2.9	Sodium	mEq/L	1	mmol/L
Chloride	mmol/L	110–124	Triglycerides	mg/dL	0.011	mmol/L
Cholesterol	mmol/L	3.5–7.2	Triiodothyronine (T ₃)	mcg/dL	15.6	nmol/L
Creatinine	mcmol/L	44–150	Thyroxine (T ₄)	mcg/dL	12.87	nmol/L
			Urea nitrogen	mg/dL	0.357	mmol/L
			Uric acid	mg/dL	0.059	mmol/L

Glucose	mmol/L	4.2–6.6
Magnesium	mmol/L	0.7–1.0
Phosphorus	mmol/L	0.9–1.7
Potassium	mmol/L	3.9–5.1
Protein	g/L	54–75
Albumin	g/L	23–31
Globulin	g/L	27–44
Sodium	mmol/L	142–152
Urea nitrogen	mmol/L	2.9–10.0

Urine protein/creatinine ratio	g/g	0.113	g/mmol
Xylose absorption	mg/dL	0.067	mmol/L

Glossary For Serum Biochemical Indicators

a ALT = alanine aminotransferase
 Alk phos = alkaline phosphatase
 AST = aspartate aminotransferase
 CK = creatine kinase
 GGT = gamma glutamyltransferase
 LDH = lactate dehydrogenase
 SDH = sorbitol dehydrogenase

Hematology (Complete Blood Count) Reference Ranges

	Conventional Units (USA)	SI Units	Dog
PCV	%	$\times 10^{-2}$ L/L	35–57
Hgb	g/dL	$\times 10$ g/L	11.9–18.9
RBCs	$\times 10^6/\text{mcL}$	$\times 10^{12}/\text{L}$	4.95–7.87
Reticulocytes	%	%	0–1.0
Absolute reticulocyte count	$\times 10^3/\text{mcL}$	$\times 10^9/\text{L}$	< 80
MCV	fL	fL	66–77
MCH	pg	pg	21.0–26.2
MCHC	g/dL	$\times 10$ g/L	32.0–36.3
Platelets	$\times 10^3/\text{mcL}$	$\times 10^9/\text{L}$	211–621
MPV	fL	fL	6.1–10.1
WBCs	$\times 10^3/\text{mcL}$	$\times 10^9/\text{L}$	5.0–14.1
Neutrophils (segmented)	%	%	58–85
Neutrophils (band)	$\times 10^3/\text{mcL}$	$\times 10^9/\text{L}$	2.9–12.0
Lymphocytes	%	%	0–3
	$\times 10^3/\text{mcL}$	$\times 10^9/\text{L}$	0–0.45
Monocytes	%	%	8–21
	$\times 10^3/\text{mcL}$	$\times 10^9/\text{L}$	0.4–2.9
Eosinophils	%	%	2–10
	$\times 10^3/\text{mcL}$	$\times 10^9/\text{L}$	0.1–1.4
Basophils	%	%	0–9
	$\times 10^3/\text{mcL}$	$\times 10^9/\text{L}$	0–1.3
M:E	%	%	0–1
	$\times 10^3/\text{mcL}$	$\times 10^9/\text{L}$	0–0.14
Plasma proteins	g/dL	10 g/L	0.75–2.5
Plasma fibrinogen	mg/dL	g/L	6.0–7.5
			150–300

Glossary For Hematological Indicators

MCV = mean corpuscular volume
 MCH = mean corpuscular hemoglobin
 MCHC = mean corpuscular hemoglobin concentration
 MPV = mean platelet volume
 M:E = myeloid:erythroid ratio

A Comprehensive Canine Serum Biochemical and Hematological Data Compiled by PawsLove Team

Disclaimer: We are German Shepherd Dog breeders, not vets. This data is compiled from extensive online research. This data is solely for informational purposes and should not replace professional veterinary advice.