



Clinical Chemistry Large/Small Animals

enzymes 25°C	unit	dog	cat	horse	cattle
α-Amylase	U/l	< 1650	< 1850	< 170	–
α-HBDH	U/l	< 50	< 97	< 170	< 700
ALT (GPT)	U/l	< 55	< 70	< 15	< 50
AP	U/l	< 108	< 140	< 450	< 300
AST (GOT)	U/l	< 25	< 30	< 250	< 80
Cholinesterase	U/l	1500-3000	1000-3000	1500-3000	50-160
CK	U/l	< 90	< 130	< 130 (190)	< 250
γ-GT	U/l	< 5	< 5 (prel.)	< 25	< 50
GLDH	U/l	< 6	< 6	< 8	< 30
LDH	U/l	< 100	< 70	< 400	< 1500
Lipase	U/l	< 300	< 280	< 250	10-80
β-HBS	mmol/l	< 0,6	< 0,6	< 0,6	< 0,6
Bilirubin	μmol/l	< 3,4	< 3,4	8,6-59,9	< 5,0
Cholesterol	mmol/l	3,1-10,1	1,8-3,9	1,81-4,66	2,07-3,88
Fructosamine	μmol/l	< 374	< 340	–	–
Bile Acids	μmol/l	<20, post-prandial <40	<20, post-prandial <40	<20	–
Total Protein	g/l	54-75	57-94	55-75	60-80
Albumin	g/l	25-44	26-56	25-54	30-40
Globulins	g/l	25-45	28-55	24-51	27-48
Ratio	A/G	0,59-1,11	0,6-1,2	0,7-1,1	0,7-1,2
Glucose	mmol/l	3,05-6,1	3,1-6,9	3,05-4,99	1,94-3,05
Urea (BUN)	mmol/l	3,3-8,3	5,0-11,3	3,3-6,7	3,3-5,0
Creatinine	μmol/l	35-106	< 168	71-159	88-177
Lactate	mmol/l	0,5-3	< 1,0	0,5-2,0	0,5-3
NEFA	mmol/l	0,1-0,5	0,1-0,5	0,1-0,5	0,1-0,5
Triglycerides	mmol/l	< 3,9	< 1,14	< 0,97	0,17-0,51
Calcium	mmol/l	2,3-3,0	2,3-3,0	2,5-3,4	2,3-2,8
Chloride	mmol/l	96-113	110-130	95-105	95-110
Iron	μmol/l	19,7-30,4	19,7-30,4	17,9-64,5	12,5-44,8
Potassium	mmol/l	3,5-5,1	3,0-4,8	2,8-4,5	3,5-4,5
Copper	μmol/l	15,7-18,9	13,4-16,9	19,0-21,0	14,2-18,9
Magnesium	mmol/l	0,6-1,3	0,6-1,3	0,5-0,9	0,8-1,3
Sodium	mmol/l	140-155	145-158	125-150	135-157
Phosphate	mmol/l	0,7-1,6	0,8-1,9	0,7-1,5	1,6-2,3
Zinc	μmol/l	7,7-19,9	12,2-15,3	9,2-19,9	10,7-19,9

Large/Small Animals Hematology

	unit	dog	cat	horse	cattle
Erythrocytes	T/l	5,5-8,5	5,0-10,0	6,0-12,0	5,0-10,0
Hematocrit	l/l	0,44-0,52	0,30-0,44	0,30-0,5	0,28-0,38
Hemoglobin	g/l	150-190	90-150	110-170	90-140
Leukocytes	G/l	6-12	6-11	5-10	4-10
Neutrophils	%	55-75	60-78	45-70	25-45
Lymphocytes	%	13-30	15-38	20-45	45-65
Monocytes	%	0-4	0-4	0-5	2-6
Eosinophils	%	0-6	0-6	0-4	1-10
Basophils	%	0	0-1	0-2	0-2
Bands	%	0-4	0-4	0-6	0-3
Hypochromasia		neg.	neg.	neg.	neg.
Anisocytosis		neg.	neg.	neg.	neg.
Platelets	G/l	150-500	180-550	90-300	300-800
Reticulocytes	/nl	< 60	< 30	–	< 0,1

Endocrinology

	unit	dog	cat	horse
T4	μg/dl	1,3-4,5	0,9-2,9	1,3-4,1
fT4	pgmol/l	7,7-47,6	6,4-33,3	9,0-44,9
T3	ng/ml	30-200	14-65 (104)	30-180
fT3	pmol/l	3,7-9,2	0,8-1,4	1,1-7,2
TSH	ng/ml	<0,6	–	–
TSH	μU/ml	–	> 0,04	–
Oestradiol	pg/ml	Prooestrus: 25-65 Oestrus: < 25 Anoestrus: < 30 Neutered: < 10 Male: < 15 Sertoli cell tumor: >30	Interoestrus: < 20pg/ml Oestrus: 20-60 – Neutered: <0,5 (1,0) –	Prooestrus: 1,2-6,2 Oestrus: 7,1-13,0 Dioestrus: 3,7-5,0 – –
Progesterone	ng/ml	Prooestrus: <1,0 – Oestrus: < 30 Ovulation: 5,5-12 Anoestrus/ Neutered: <1,0	preov: <1,0 – postov: >1,0 –	Values > 2,0 indicate luteal activity – – –
Testosterone	ng/ml	Male: 1,5-8,5 – Female: <0,4 Neutered: <0,5	Male: 2,5-7,0 – Neutered: <0,5	Stallion: 1,5-5,0 Gelding: <0,1 Mare: <0,1
Cortisol	ng/ml	5-65	3-50 (130)	30-67
ACTH	pg/ml	6-58	–	20-50
Insulin	ng/ml	8-25	10-30	11-105

Additional Parameters

	unit	dog	cat	horse
TLi	μg/l	>5 (quest.: 2,5-5)	12,0-82,0	–
B12	pg/ml	300-800	300-800	700-1780
Folic Acid	ng/ml	3,0(4,0)-10,0	3,0-10,0	5-17

Birds/Rabbits/Guinea Pigs Clinical Chemistry

enzymes 25°C	unit	parakeets	amazones and amazone-like birds	parrots	rabbits	guinea pigs
α-Amylase	U/l	–	100-600	200-600	< 459	< 3159
ALT (GPT)	U/l	–	–	–	< 61	< 61
AP	U/l	–	–	–	< 397	< 418
AST (GOT)	U/l	86-390	100-400	100-400	< 28	< 90
Cholinesterase	U/l	–	2000-4000	2500-12000	–	–
CK	U/l	–	100-500	130-400	< 958	< 2143
γ-GT	U/l	–	–	–	< 13	< 13
GLDH	U/l	–	–	–	< 19	< 17
LDH	U/l	76-450	150-400	150-400	–	–
Lipase	U/l	–	–	–	< 1587	< 152
Albumin	g/l	–	–	–	36-57	–
Cholesterol	mmol/l	–	–	–	0,3-1,7	0,3-1,7
Fructosamine	μmol/l	–	–	–	314-527	134-271
Bile Acids	μmol/l	< 100	20-150	20-100	–	–
Total Protein	g/l	22-50	26-50	26-46	49-74	44-66
Uric Acid	μmol/l	190-833	70-500	100-500	–	–
Urea (BUN)	mmol/l	–	–	–	2,1-8,4	3,3-10,3
Creatinine	μmol/l	–	–	–	34-166	< 77
Triglycerides	mmol/l	–	–	–	0,5-3,4	0,3-2,4
Calcium	mmol/l	1,7-2,8	2,0-3,5	1,75-3,5	3,1-3,9	2,4-3,1
Iron	μmol/l	–	–	–	20-59	26-76
Potassium	mmol/l	2,5-4,5	2,0-4,5	2,4-4,2	3,7-6,3	4,5-8,8
Magnesium	mmol/l	–	–	–	0,9-1,7	2,4-6,2
Sodium	mmol/l	130-150	125-160	135-165	138-155	130-150
Phosphate	mmol/l	0,8-2,5	0,3-1,8	0,35-2,0	0,8-3,2	1-7

Hematology

	unit	parakeets	amazones and amazone-like birds	parrots	rabbits	guinea pigs
Erythrocytes	T/l	3,2-4,8	1,8-2,6	2,7-3,6	5,9-8,1	4,51-6,36
Hematocrit	l/l	0,48-0,58	0,44-0,55	0,43-0,51	0,36-0,55	0,39-0,55
Hemoglobin	g/l	138-168	135-200	142-171	113-171	117-169
Leukocytes	G/l	1,0-7,7	1,5-11,6	3,3-10,3	3,0-11,9	2,9-14,4
Neutrophils/ Pseudoeosinophils	%	–	–	–	15-60	12-62
Heterophils	%	20-26	50-58	56-57	–	–
Lymphocytes	%	58-68	33-43	36-37	32-81	28-84
Monocytes	%	12-19	0-2	0-1	0-12	0-9
Eosinophils	%	1-4	2-4	2-3	0-1	0-14
Basophils	%	4-9	1-5	4-5	0-7	0-2
Bands	%	–	–	–	0	0-1
Hypochromasia		neg.	neg.	neg.	neg.	neg.
Anisocytosis		neg.	neg.	neg.	neg.	neg.
Platelets	G/l	34,4-38,4	–	46-49	193-725	273-745