Table 14 b: blood values in the Loridae

Unit	Louis	Nusticabus puomagus	Musticabus	Perodicticus
Unit				Pottos
	Sichael forises	Ecsel slow loris	Slow lot ises	Tottos
	2 males, 1 female, Indian subspecies? One year in captivity ⁶⁸ . 2 successive samples from one sick female, one sample from a healthy male from Sri Lanka, captive ⁶⁷ . ISIS clinical pathology reference ranges as per July 1, 1996; animals from several zoos, numbers entered separately in this table under values ⁶¹ .	ISIS clinical pathology reference ranges as per July 1, 1996; animals from several zoos, numbers entered separately in this table under values ⁶¹ .	ISIS clinical pathology reference ranges as per July 1, 1996; animals from several zoos, numbers entered separately in this table under values ⁶¹ .	
Definition, measu	Mildly biconcave with spotty central pallor. Nonnucleated; occasionally nucleated cells discarding the pyknotic nucleus occur ⁶⁸ . Anisocytosis: healthy male: +, sick female: -; ++. Polychromasia: ++ (all samples). Occasional baso stippling. H-J bodies: + (all samples) ⁶⁷ . ring method, remarks:			
		3 31 - 11 10 mean: 6 21 (n = 21 from	3 93 - 6 94 mean: 5 84 (n = 18 from	
mm ⁶⁸ , ⁶⁹ x 10 ⁵ /cubic mm	3.67, female: 2.59 - 6.74, mean 3.94, mean species value: 3.94 millions /	14 animals). ⁶¹	14 animals). ⁶¹	
, (x 10 μ1)	Healthy male: 5.71, sick female: 6.5; 7.27 (x 10 μ l) ⁶⁷ . 4.20 - 6.37, mean: 5.47 (n = 9, from 8 animals). ⁶¹			
Definition, measu	ring method, remarks:	•	•	
Definition measu	0 - 31, mean: 11 (n = 3, from 3 animals) ⁶¹ .	1 - 2, mean: 1 (n = 6, from 6 animals)	0 - 13, mean: 2 (n = 10, from 9 animals) ⁶¹ .	
		43.2 - 154.1, mean: 71.6 (n = 21. from	65.1 - 77.9, mean: 72.6 (n = 18. from	
	female: 127.98 - 162.16, mean 147.33, mean species value: 125.15 cubic μ ⁶⁸ . Healthy male: 77.1, sick female: - *; 60.8 (fl) ⁶⁷ . (* inadequate sample to provide accurate data) 71.4 - 83.5, mean: 78.9 (n = 9, from 8 animals) ⁶¹ .	14 animals) ⁶¹ .	14 animals) ⁶¹ .	
	millions / cubic mm 68 , 69 x 10^5 /cubic mm 2 , (x $10~\mu$ l) 67 . Definition, measured befinition, measured by 68 , 69	Slender lorises 2 males, 1 female, Indian subspecies? One year in captivity 68. 2 successive samples from one sick female, one sample from a healthy male from Sri Lanka, captive 67. ISIS clinical pathology reference ranges as per July 1, 1996; animals from several zoos, numbers entered separately in this table under values 61. Mildly biconcave with spotty central pallor. Nonnucleated; occasionally nucleated cells discarding the pyknotic nucleus occur 68. Anisocytosis: healthy male: +, sick female: -; ++. Polychromasia: ++ (all samples). Occasional baso stippling. H- J bodies: + (all samples) 67. Definition, measuring method, remarks: millions / cubic mm 68, 69	Stender lorises Lesser slow loris	Slender lorises Lesser slow loris Slow lorises

Table 14 b: blood values in the Loridae

English terms,	Unit	Loris	Nycticebus pygmaeus	Nycticebus	Perodicticus		
English and German abbreviations		Slender lorises	Lesser slow loris	Slow lorises	Pottos		
Mean red corpuscular diameter 68		Male: 5.28 - 8.80, female: 5.28 - 8.80,					
		mean value: 7.04 μ ⁶⁸					
	Definition, measu	ring method, remarks: determined by meas	suring 100 cells in a fresh unstained blood	smear ⁶⁸			
Mean corpuscular thickness 68		Calculated mean value: 2.77 μ 68					
		ring method, remarks: calculated from mea	an corpuscular volume and corpuscular dia	meter of erythrocyte cell 68			
P.C.V. ⁶⁷ , packed cell volume ⁶⁸	% ⁶⁷ , ⁶⁸	Male: 36.30 - 46.50, mean 41.67,					
		female: 39.00 - 43.00, mean 41.32,					
		mean species value: 41.50 % ⁶⁸ .					
		Healthy male: 44, sick female: - *; 39.5 % 67.					
		(* inadequate sample to provide					
		accurate data)					
	Definition, measu	ring method, remarks: Erythrocytes: done l	by micro hematocrit method ⁶⁸	I	1		
Haemoglobin ² , ⁵ , hemoglobin ⁶¹	g/100ml ²	Male: 9.80 - 16.20, mean 13.08,	8.6 - 23.0, mean: 15.6 (n = 20, from 13	9.2 - 17.5, mean: 13.9 (n = 40, from 30			
		female: 9.60 - 14.40, mean 12.10, mean	animals) 61.	animals). 61			
		species value: 12.67 gm% 68	,	,			
		11.6 - 16.9, mean: 15.1 (n = 9, from 8					
		animals). 61					
		ring method, remarks:					
$M.C.H.$, Hb_{E} , mean corpuscular	pg (10 ⁻¹² g)	23.9 - 29.4, mean: 27.7 (n = 9, from 8	16.6 - 31.4, mean: 26.0 (n = 20, from	20.6 - 28.1, mean: 24.6 (n = 18, from			
haemoglobin,		animals). 61	13 animals) ⁶¹ .	14 animals). 61			
erythrocyte hemoglobin content ⁶⁹		<u> </u>		(4.06) 10 1 68			
. 69 60		ring method, remarks: 10 x Haemoglobin (g/100 ml) divided by number of erythrocy	rtes (10°/μl) in pg ^{os}			
Hemoglobin concentration ⁶⁸ , ⁶⁹	g / 100 ml blood						
	g / 100 ml						
	erythrocytes ⁶⁹						
		ı ring method, remarks: Estimated using Sal	ı ıli hemoglobinometer ⁶⁸	I			
Hb ⁶⁷	g/dl ⁶⁷	Healthy male: 16.3, sick female: 18.8;	in nemographic increase				
	8	16.2 (g/dl) ⁶⁷ .					
	Definition, measu	ring method, remarks:	'	'	'		
M.C.H.C.	% ⁶⁷	Healthy male: 37, sick female: - *; 41	20.0 - 53.0, mean: 42.0 (n = 54, from	26.0 - 38.9, mean: 33.0 (n = 39, from			
	g/l ⁵	% ⁶⁷ .	35 animals) ⁶¹ .	30 animals). 61			
	gm% ⁶⁸	(* inadequate sample to provide					
	g Hb/100 ml	accurate data)					
		32.5 - 38.7, mean: 35.1 (n =9, from 8					
	1	animals). 61			1		
		ring method, remarks: mean haemoglobin	conzentration of erythrocyte cell; mean co	rpuscular haemoglobin concentration:			
	100 x Haemoglob	in (g/100 ml) divided by haematocrit (%)					

Table 14 b: blood values in the Loridae

English terms,	Unit	Loris	Nycticebus pygmaeus	Nycticebus	Perodicticus
English and German abbreviations		Slender lorises	Lesser slow loris	Slow lorises	Pottos
Other blood cells,blood cells in					
general:					
HK, HKT, hematocrit ² , ⁶¹ , ⁵ , ¹ , ⁶⁹ ,	1/12, %	30.0 - 50.2, mean: 43.3 (n = 9, from 8	24.9 - 51.0, mean: 42.1 (n = 21, from	25.0 - 38.0, mean: 35.5 (n = 11, from 6	
haematocrit, erythrocyte packed volume.	ml / 100 ml	animals). 61	14 animals) 61.	animals). 61	
	blood ⁶⁹				
			e blood volume Vol.% or Vol.% x 0,01	(Blood treated against coagulation, for inst	tance with EDTA, centrifuged, volume of
	cellular parts deter	rmined			
Haematocrit (l/l) divided by erythrocyte	fl ⁶⁷ , ⁵				
number					
		ring method, remarks: divided by erythroc	yte number		
		C.V. and R.B.C. total count values 68			
Leukocytes	G/1 ²				
	Definition, measu	ring method, remarks: White blood cells: g	ranulocytes, lymphocytes, monocytes		
J, leukocyte index					
	Definition, measu	ring method, remarks: % of neutrophilic g	ranulocytes divided by % of lymphocytes	;	
Number of leukocytes ² , total W.B.C.,	x 10 ³ / cubic mm	Male: 4.550 - 18.950, mean 11.476,		3.190 - 17.6, mean: 9.618 (11 animals)	
leukocyte count 68. White blood cell	2 , (x 10 μ l) 67 ;	female: 10.850 - 25.550, mean 18.541,		61.	
count 61	$\times 10^{3}/\mu l$	mean species value: 14.738 / cubic mm			
	cubic mm 68.	68.			
		Healthy male: 24000, sick female:			
		13700; 40200 (x 10 μ l) ⁶⁷ .			
		8.910 (1 animal) ⁶¹			
	Definition, measu	ring method, remarks:			
Reticulocyte count		Male: 45.390 - 101.140, mean 79.683,		0.7 (1 animal) ⁶¹ .	
		female: 33.600 - 96.650, mean 87.090,			
		mean species value: 83.050 per cubic			
		mm ⁶⁸			
	Definition, measu	ring method, remarks:			
Reticulocyte diameter		Mean diameter 9.5 μ			
		ring method, remarks:			
Myelocytes ^{67, 5}	% ⁶⁷	Sick female: -; 6 % ⁶⁷ .			
	Definition, measu	ring method, remarks: precursors of granu			
Platelets 68, platelet count 68	Count/µl	$150 (n = 1)^{61}$.	134 - 781, mean: 440 (5 animals) ⁶¹ .	107 - 584, mean: 297 (4 animals) ⁶¹ .	
(= thrombocytes)	Definition, measur	ring method, remarks: Counting in special	chamber in the microscope or automatica	ılly	

Table 14 b: blood values in the Loridae

English terms,	Unit	Loris	Nycticebus pygmaeus	Nycticebus	Perodicticus
English and German abbreviations		Slender lorises	Lesser slow loris	Slow lorises	Pottos
Digg					
Differential hemogram:	1 2	T	T		
Differential haemogram ²	% ²		200 11 : 11 1	17	
Differential blood count	with pathological		200 cells in a blood smear; counted: neutr	ophilic, eosinophilic and basophilic granul	ocytes, monocytes, lymphocytes, cells
	with pathological	l Changes			
		I	I	1	l
Total polymorph		Male: 21 - 34, mean 29, female: 17 –			
r y r		50, mean 37, mean species value: 32 %			
		68			
	Definition, measu	ring method, remarks:			
Segmented neutrophils ⁶¹ = normal		0.980 (n = 1). ⁶¹		0.734 - 9.150, mean: 3.327 (n = 12,	
	ļ			from 10 animals). 61	
2.7.2		ring method, remarks: Show segmented nu	iclei in blood stain	1	T
N ² , neutrophils ² , ⁶⁷	% ⁶⁷	Healthy male: 15, sick female: 17; 14 % ⁶⁷ .			
	Definition messu	% °. ring method, remarks: Neutrophilic granul	ocytes (neutrophilic: cytoplasmic granulas	show neutral stain in blood stain)	l
Lymphocytes 61	Definition, measu	7.040 (n = 1). 61	Cocyces (neutrophinic, cytopiasinic grantias	1.120 - 10.50, mean: 5.763 (n = 12,	
Lymphocytes		7.040 (II = 1).		from 10 animals). ⁶¹	
	Definition measu	ı ring method, remarks: round basophilic nu	ı ıclei in blood stain	nom to annuas).	ı
L ² , Total lymphocyte count ⁶⁸	%	Male: 63 - 77, mean 68, female: 40 -			
		77, mean 58, mean species value: 64 %			
		68			
		Healthy male: 81, sick female: 74; 75			
		% ⁶⁷ .			
	Definition, measu	ring method, remarks: round basophilic nu	iclei in blood stain	T	
Small lymphocyte count ⁶⁸		Male: 57 - 73, mean 65, female: 40 -			
		74, mean 55, mean species value: 65 %			
	Definition messu	ring method, remarks: Containing little cyl	tonlasm	I	
Large lymphocyte count ⁶⁸	Definition, measu	Male: 10 - 11, mean 3, female: 0 - 7,			
Large lymphocyte count		mean 3, mean species value: 3 % ⁶⁸			
	Definition, measu	ring method, remarks: Containing larger at	mount of cytoplasm	Į.	ı
M ² , monocytes ²	% ⁶⁷	Male: 0 - 67, mean 1, female: 1 - 5,		0.000 - 0.096, mean: 0.039 (n = 10,	
		mean 2, mean species value: 2 % 68		from 9 animals). 61	
		Sick female: 2; 1 % ⁶⁷ .			
		0.0000 (n = 1). ⁶¹			
_		ring method, remarks: Largest mononuclea	ar white blood cells with U-shaped nuclei	1	
E ² , eosinophils (eosinophilic	% ⁶⁷	Male: 0 - 4, mean 2, female: 1 - 5,		0.000 - 0.099, mean: 0.020 (n = 5, from	
granulocytes) ² , ⁶⁷		mean 3, mean species value: 2 % ⁶⁸		5 animals). 61	
		Healthy male: 4, sick female: 7; 2 % ⁶⁷ .			
		0.0001 (n = 1). ⁶¹			
l	Definition, measu	ring method, remarks: Granulocytes with e	eosinic cytoplasmatic granulas in blood sta	in	

Table 14 b: blood values in the Loridae

English terms, English and German abbreviations	Unit	Loris Slender lorises	Nycticebus pygmaeus Lesser slow loris	Nycticebus Slow lorises	Perodicticus Pottos
B ² , basophilic granulocytes ²	Definition mass	Male: 0 - 1, female: 0 - 2 % ⁶⁸ suring method, remarks: Granulocytes with	hasanhilia autanlasmatia granulas in bloo	d stain	
Serum ¹ , clinical-chemical data ² :	Definition, meas	suring method, remarks. Grandiocytes with	basopiniie cytopiasmatic granuias in bioo	od Stani	
Albumin ²	g / dl ²	4.1 (n = 1). ⁶¹	2.4 - 4.6, mean: 3.6 (n = 5, from 5	2.9 - 4.2, mean: 3.5 (n = 14, from 11	
Albumin			animals). ⁶¹	animals). ⁶¹	
	Definition, meas	suring method, remarks: colorimetry 61.		T	
Alanine aminotransferase ⁶¹		48 - 79, mean: 64 (n = 4, from 4 animals). ⁶¹	45 - 207, mean: 89 (n = 15, from 11 animals). ⁶¹	25 - 539, mean: 96 (n = 29, from 23 animals). ⁶¹	
		suring method, remarks:		_ _	
AP, Alkaline phosphatase ⁶¹	Units ²		53 - 135, mean: 88 (n = 9, from 7 animals). ⁶¹	81 - 518, mean: 196 (n = 29, from 23 animals). ⁶¹	
	Definition, meas	suring method, remarks: Colorimetric; imp	ortant in hepato-biliar and bone alteration	ns	
α-Amylase ⁶¹	Units/l		542 - 598, mean: 570 (n = 2, from 2 animals). ⁶¹	1204 - 1884, mean: 1573 (n = 5, from 5 animals). ⁶¹	
	Definition, meas	suring method, remarks: Colometric; impor	tant in acute pancreatitis		
Anorg. phosphates ¹	Definition, meas	suring method, remarks: Colorimetric; imp	ortant in bone fractures, acromegaly, kidno	 ey insufficiency and hypervitaminosis D, ric	ekets
Aspartate aminotransferase 61		33 - 76, mean: 47 (n = 5, from 5 animals). ⁶¹	48 - 148, mean: 101 (n = 14, from 11 animals). ⁶¹	83 - 226, mean: 116 (n = 19, from 16 animals). 61	
	Definition, meas	suring method, remarks:			
Bicarbonate ⁶¹				19.0 - 28.0, mean: 22.3 (n = 3, from 3 animals). ⁶¹	
		suring method, remarks:			
Bilirubin ¹	mg / dl ² Definition, meas	suring method, remarks:			
Total bilirubin ⁶¹	mg/100 ml	0.2 -0.5, mean: 0.3 (n = 6, from 5 animals). ⁶¹	0.1 - 0.6, mean: 0.3 (n = 9, from 7 animals). ⁶¹	0.0 - 0.8, mean: 0.2 (n = 21, from 17 animals). ⁶¹	
	Definition, meas	suring method, remarks: colorimetric impo-			
Blood urea nitrogen ⁶¹ , urea ²	mg % ²	27 - 47, mean: 39 (n = 7, from 6 animals). ⁶¹	14 - 45, mean: 25 (n = 17, from 12 animals). ⁶¹	5 - 34, mean: 16 (n = 31, from 24 animals). ⁶¹	
	mmol / l ²				
		suring method, remarks: encymatic; impro			
Calcium ²	mg % ²	$10.0 \text{ (n = 1)}. ^{61}$	7.8 - 11.8, mean: 10.2 (n = 10, from 8 animals). ⁶¹	7.7 - 13.8, mean: 10.1 (n = 28, from 22 animals). ⁶¹	
	mmol/l ²		,		
	Definition, meas	suring method, remarks: important in vitan	nin D-deficiency, kidney insufficiency, ost	eoporosis, malabsorption, hypoparathyreoid	lism, tetany
Carbon dioxide ⁶¹		24.0 (n = 1). ⁶¹	21.0 - 23.0, mean: 22.0 (n = 3, from 3 animals). ⁶¹	16.0 - 28.0, mean: 20.6 (n = 10, from 7 animals). ⁶¹	
	Definition, meas	suring method, remarks:	,	'	
Chloride ¹ , ⁶¹		111 - 114, mean: 113 (n = 2, from 2 animals). 61 suring method, remarks:	101 - 109, mean: 105 (n = 4, from 4 animals). ⁶¹	98 - 124, mean: 109 (n = 24, from 19 animals). 61	

Table 14 b: blood values in the Loridae

English terms,	Unit	Loris	Nycticebus pygmaeus	Nycticebus	Perodicticus
English and German abbreviations		Slender lorises	Lesser slow loris	Slow lorises	Pottos
8	<u>L</u>				
Cholesterol, cholesterin ¹	mg / dl ²	215 - 241, mean: 228 (n = 2, from 2	233 - 379, mean: 302 (n = 10, from 8	0 - 810, mean: 417 (n = 22, from 17	
		animals). 61	animals). 61	animals). 61	
		ring method, remarks: Encymatic; importa	int in diabetis mellitus, nephrotic syndrom	ne, liver alterations, hypothyreosis.	
Creatinine ¹ , ⁶¹	mg / dl ²	0.3 - 0.4, mean: 0.3 (n = 2, from 2	0.3 - 0.4, mean: 0.3 (n = 5, from 5	0.1 - 2.5, mean: 0.7 (n = 29, from 22	
		animals). 61	animals). 61	animals). 61	!
	Definition, measu	ring method, remarks: colorimetric; impor	tant for diagnosis of kidney function		
Creatine phosphokinase 61	mg / dl^2		43 - 360, mean: 138 (n = 4, from 4	17 - 108, mean: 42 (n = 6, from 6	
			animals). 61	animals). 61	
	Definition, measu	ring method, remarks: colorimetric; impor			
Gamma glutamyltransferase 61	Units/l		19 - 91, mean: 47 (n = 9, from 7	10 - 30, mean: 25 (n = 7, from 7	
			animals). 61	animals). 61	
	Definition, measu	ring method, remarks: colorimetric; impor			
Globulin 61		2.4 (n = 1). ⁶¹	2.6 - 3.4, mean: 3.0 (n = 5, from 5	2.3 - 5.2, mean: 4.1 (n = 13, from 10	
			animals). 61	animals). 61	
		ring method, remarks: colorimetry 61. Impo			
Glucose ²	mg % ²	103 - 264, mean: 182 (n = 7, from 6	102 - 422, mean: 181 (n = 15, from 11	54 - 245, mean: 121 (n = 34, from 25	
		animals). ⁶¹	animals). 61	animals). 61	
	mmol/l ²				
	mg / dl ²				
	Definition, measu	ring method, remarks: important in diabet	s mellitus, pancreatitis, cushing syndrome	e, exciting	
GOT ¹	U/I				
	Definition, measu	ring method, remarks: important in diagno	sis of liver and heart		
Iron 61				161 - 216, mean: 190 (n = 4, from 4	
				animals). 61	
	Definition, measu	ring method, remarks: of diagnostic value			
Lactate dehydrogenase 61	U/l		95 - 180, mean: 137 (n = 4, from 4	117 - 1092, mean: 304 (n = 11, from 11	
			animals). 61	animals). 61	
		ring method, remarks: of diagnostic value	in alterations in the liver, blood, muscles		1
Lipase 61	U/I			42 (n = 1). 61	
	Definition, measu	ring method, remarks: specific for pancrea			
Magnesium 61			2.70 - 3.50, mean: 3.10 (n = 2, from 2		
			animals). 61		
		ring method, remarks:			
Phosphorus ²	mg % ²	3.9 (n = 1). ⁶¹	4.2 - 8.9, mean: 6.1 (n = 4, from 4	1.4 - 10.4, mean: 4.1 (n = 26, from 20	
			animals). 61	animals). 61	
See anorg. Phosphat. (above)	mmol/l ²				
		ring method, remarks:			
Potassium ²	mmol/l mÄq/l ²	4.0 (n = 1). ⁶¹	3.0 - 4.4, mean: 3.9 (n = 4, from 4	2.5 - 5.8, mean: 4.0 (n = 26, from 21	
			animals). 61	animals). 61	
		ring method, remarks:		<u></u>	
Sodium ¹	mEq / dl ²	147 - 148, mean: 148 (n = 2, from 2	142 - 144, mean: 143 (n = 4, from 4	138 - 168, mean: 148 (n = 26, from 21	
		animals). 61	animals). 61	animals). 61	

Table 14 b: blood values in the Loridae

English terms,	Unit	Loris	Nycticebus pygmaeus	Nycticebus	Perodicticus	
English and German abbreviations		Slender lorises	Lesser slow loris	Slow lorises	Pottos	
	Definition, measuring method, remarks:					
Total protein 61		5.5 - 7.0, mean: 6.1 (n = 6, from 5	4.8 - 7.6, mean: 6.5 (n = 16, from 11	4.8 - 8.9, mean: 7.2 (n = 23, from 19		
		animals). 61	animals). 61	animals). 61		
	Definition, measu	ring method, remarks: colorimetry 61. Con-	sists of albumin and globulin.			
Triglyceride 61			19 - 150, mean: 79 (n = 10, from 8	90 - 1631, mean: 441 (n = 10, from 10		
			animals). 61	animals). 61		
	Definition, measu	ring method, remarks:				
Uric acid 61		1.4 - 2.1, mean: 1.8 (n = 2, from 2	0.9 - 2.3, mean: 1.5 (n = 6, from 5	0.8 - 3.8, mean: 14 (n = 14, from 14		
		animals). 61	animals). 61	animals). 61		
	Definition, measu	ring method, remarks:			•	
Other:						
Band N 67	% ⁶⁷	Sick female: -; 2 % ⁶⁷ .				
	Definition, measuring method, remarks:					
Neutrophilic bands 61			0.050 - 0.250, mean: 0.150 (n = 2, from			
1			2 animals). ⁶¹			
	Definition, measu	ring method, remarks:	•	•	•	

Loris and related species: health

Last amendment: 29 May 2000