



Control Data of BrlHan:WIST@Tac(GALAS) Rat

Taconic Biosciences

Environmental Conditions and Investigation Items

Environmental Conditions (Isolated Barrier Unit® System)

Temperature:	68 – 72° F
Humidity:	30 – 70 %
Air Filtration:	HEPA, 100% fresh
Ventilation Rate:	15 – 20 air changes per hour
Light Cycle:	12 hours on: 12 hours off
Caging:	Breeding 10.5 x 19.0 x 8.0 Holding 10.5 x 19.0 x 8.0
Diet:	NIH-31 Diet, Autoclaved (121°C, 25 min.), <i>ad libitum</i>
Water:	Chlorinated to 5 to 10 ppm, <i>ad libitum</i>

Investigation Items

Table 1a	Body weight (3 to 36 weeks of age) *Study was terminated at week 36. Study was restarted in April 2003.
Table 1b	Body weight (3 to 106 weeks of age)
Figure 1a	Body weight curve (3 to 36 weeks of age)
Figure 1b	Body weight curve (3 to 106 weeks of age)
Figure 1c	Monthly weight gains (3 to 106 weeks of age)
Figure 2	Survival rate (3 to 106 weeks of age)
Table 2	Hematology (5 to 106 weeks of age)
Table 3	Serum biochemistry (21 to 106 weeks of age)
Table 4	Urinalysis (21 to 106 weeks of age)
Table 5	Absolute and relative organ weights (21 to 106 weeks of age)
Table 6	Histopathology (21 to 106 weeks of age)

Table 1a Body weight

Weeks	Male			Female			Weeks	Male			Female		
	n	Mean	SD	n	Mean	SD		n	Mean	SD	n	Mean	SD
3	30	43.7	2.7	30	42.8	2.4	28	30	474.0	54.2	30	268.1	29.1
4	30	78.0	5.0	30	72.9	4.0	29	30	478.3	55.8	30	269.2	28.7
5	30	120.9	7.4	30	104.0	6.0	30	30	484.8	57.0	30	270.5	27.2
6	30	166.7	9.6	30	130.1	9.3	31	30	491.4	58.7	30	274.1	29.3
7	30	213.5	13.5	30	153.1	11.4	32	30	491.6	60.9	30	273.8	29.8
8	30	254.6	18.4	30	170.8	12.8	33	30	499.8	62.4	30	277.3	30.6
9	30	285.7	21.9	30	186.4	14.1	34	30	505.1	63.9	30	278.9	31.1
10	30	314.3	25.6	30	199.6	16.0	35	30	510.0	66.5	30	282.5	32.5
11	30	337.2	28.2	30	211.5	17.8	36	30	517.0	67.6	30	285.7	33.6
12	30	356.2	30.8	30	220.1	18.2							
13	30	366.5	33.4	30	224.1	19.0							
14	30	381.8	35.5	30	231.2	19.5							
15	30	384.7	41.6	30	233.8	20.2							
16	30	395.0	38.6	30	236.2	21.2							
17	30	406.7	40.2	30	241.2	20.4							
18	30	413.6	42.0	30	244.3	22.4							
19	30	419.3	43.6	30	246.5	23.1							
20	30	430.4	43.7	30	248.1	22.9							
21	30	432.5	60.2	30	254.0	23.9							
22	30	452.8	53.8	30	257.1	24.8							
23	30	453.2	49.3	30	255.8	20.5							
24	30	460.3	50.7	30	262.1	27.0							
25	30	462.8	52.0	30	262.7	26.7							
26	30	466.6	52.7	30	264.0	26.9							
27	30	461.2	68.7	30	265.8	28.8							

- Data collected June 19, 2001 through February 5, 2002
- Housing 3 to 5 weeks of age 10 per cage, 6 to 36 weeks of age, 5 per cage

Table 1b Body weight

Weeks	Male			Female		
	n	Mean	SD	n	Mean	SD
3	55	52.6	4.9	50	50.1	5.4
4	55	86.9	8.1	50	79.8	7.5
5	55	129.3	11.7	50	110.9	9.6
6	55	168.6	15.9	50	132.4	10.4
7	55	212.6	19.6	50	154.6	12.0
8	55	254.8	23.1	50	173.9	13.7
9	55	282.4	25.7	50	187.9	15.1
10	55	314.3	27.5	50	201.6	15.2
11	55	334.8	29.1	50	211.4	15.5
12	55	355.6	31.0	50	219.7	16.5
13	55	372.2	32.3	50	225.5	16.6
14	55	390.6	34.6	50	232.5	16.9
15	55	401.8	36.5	50	236.7	17.0
16	55	412.6	37.5	50	241.1	18.2
17	55	421.2	37.3	50	245.4	18.1
18	55	433.9	39.3	50	250.8	17.4
19	55	439.1	39.8	50	250.9	17.5
20	55	444.3	40.5	50	251.5	18.0
21	55	453.1	41.6	50	255.5	18.2
22	52	461.2	43.5	50	257.3	18.3
23	52	467.0	44.5	50	258.4	18.9
24	52	476.6	44.9	50	262.6	20.2
25	52	479.3	45.1	50	263.8	19.9
26	52	486.5	46.7	50	267.0	20.5
27	52	492.5	47.6	50	270.3	19.9
28	52	497.6	48.6	50	272.6	21.1
29	52	501.9	48.6	50	273.4	21.3
30	52	507.0	48.4	50	274.8	21.8
31	52	509.9	48.1	50	276.5	22.3
32	52	516.4	50.2	50	277.9	23.1
33	52	523.1	51.6	50	282.2	24.5
34	50	526.5	52.0	50	282.5	24.3
35	50	529.8	52.6	50	283.7	26.7
36	50	535.1	53.9	50	288.1	26.0
37	50	542.2	54.0	50	289.9	27.8
38	50	544.7	54.6	50	293.0	29.8
39	50	550.4	55.7	50	293.3	31.3
40	50	555.0	55.9	50	295.1	31.4
41	50	559.0	56.3	50	296.6	32.1
42	50	561.3	57.3	50	300.6	32.2
43	50	562.5	61.0	50	302.1	33.9
44	49	573.8	59.1	50	305.2	35.5
45	49	574.9	60.4	50	308.3	36.4
46	49	580.5	61.1	50	311.9	38.1
47	49	583.4	61.9	50	313.1	37.4
48	49	587.7	62.8	50	314.6	38.5
49	49	591.9	62.8	50	316.8	38.9
50	49	597.2	64.1	50	319.0	39.6
51	49	600.0	64.6	50	321.3	41.0
52	49	604.7	65.1	50	324.7	41.3
53	49	606.9	65.5	50	328.3	43.1
54	49	613.4	66.5	50	331.1	44.9

Weeks	Male			Female		
	n	Mean	SD	n	Mean	SD
55	34	616.1	52.5	35	334.0	40.5
56	34	619.3	53.2	35	331.8	43.1
57	34	619.9	53.7	35	330.0	40.7
58	34	622.0	53.8	35	329.7	39.7
59	34	624.6	55.0	35	330.1	40.7
60	34	623.9	55.6	35	329.5	40.8
61	34	622.0	55.8	35	329.9	39.5
62	34	625.7	57.3	35	330.3	40.9
63	34	625.9	58.2	35	332.9	39.8
64	34	629.2	58.2	35	333.1	41.3
65	34	630.3	58.8	35	335.8	41.5
66	34	629.0	60.1	35	336.4	41.6
67	34	630.1	59.9	35	336.5	40.6
68	34	635.5	61.1	35	339.6	41.7
69	34	638.3	62.0	35	340.4	41.7
70	34	645.1	63.0	35	342.4	43.4
71	34	644.4	63.5	35	342.7	43.1
72	34	650.6	64.0	35	343.8	44.2
73	34	654.0	64.5	35	343.7	41.4
74	34	658.1	66.2	35	347.5	45.4
75	34	658.3	66.5	35	349.0	44.3
76	34	661.2	66.9	35	349.0	46.2
77	34	659.2	66.5	35	347.5	50.7
78	34	662.3	68.3	35	348.7	45.6
79	34	663.4	69.0	35	352.1	46.3
80	34	662.8	69.1	35	350.2	46.8
81	34	663.5	69.1	34	361.1	46.8
82	34	661.8	69.1	34	364.9	47.6
83	34	659.7	69.3	33	370.2	48.3
84	34	662.7	70.6	33	368.6	55.0
85	34	668.5	71.0	33	374.9	49.7
86	34	674.9	71.8	33	384.7	52.4
87	34	683.5	72.2	33	388.3	51.6
88	34	683.5	74.7	33	383.9	50.8
89	34	688.9	77.1	33	382.1	51.2
90	33	691.2	80.2	32	388.0	55.5
91	33	690.6	80.9	32	389.7	53.8
92	33	688.1	82.9	32	391.1	52.1
93	33	684.3	84.9	32	386.8	51.3
94	33	684.3	88.0	32	385.1	51.5
95	33	687.1	90.9	32	397.7	68.4
96	33	692.0	92.6	31	390.4	54.5
97	33	695.0	94.7	30	396.4	53.1
98	33	693.0	96.3	30	393.0	57.9
99	33	693.0	98.1	29	401.1	56.9
100	32	691.3	99.6	28	404.0	58.2
101	32	705.1	82.8	27	408.3	57.7
102	32	706.6	84.1	27	409.7	56.7
103	32	711.9	85.6	27	410.7	54.5
104	32	713.3	89.4	27	415.5	55.2
105	32	712.1	93.1	27	416.5	56.1
106	32	709.9	94.9	27	414.7	55.9

- Data collected April 11, 2003 through April 6, 2005
- All animals have week of birth of March 17, 2003 and were sourced from I022.
- Housing 3 to 5 weeks of age 10 per cage, 6 to 13 weeks of age 5 per cage, 14 to 81 weeks of age 2-3 per cage

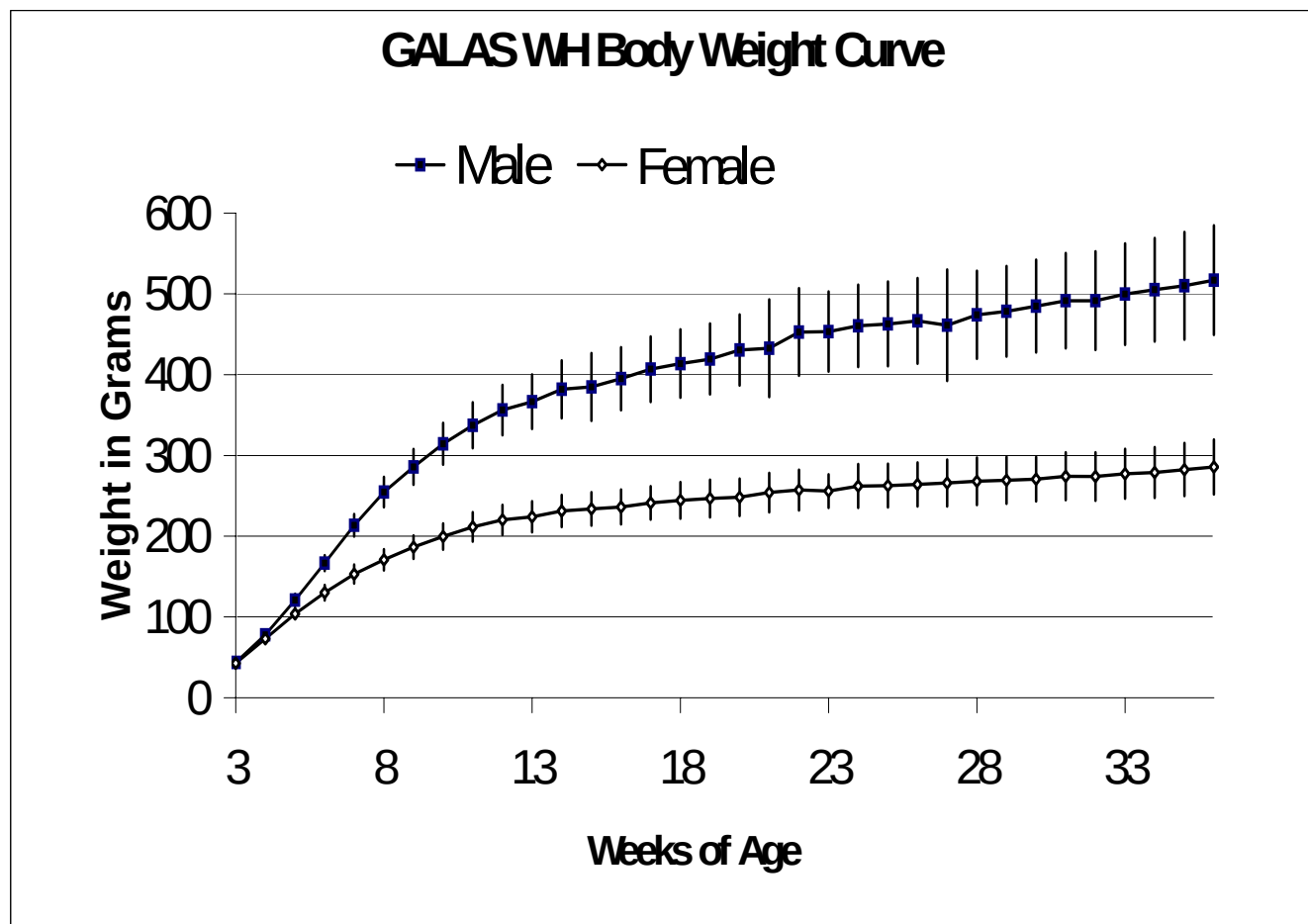
Figure 1a: Body weight curve, from data of Table 1a.

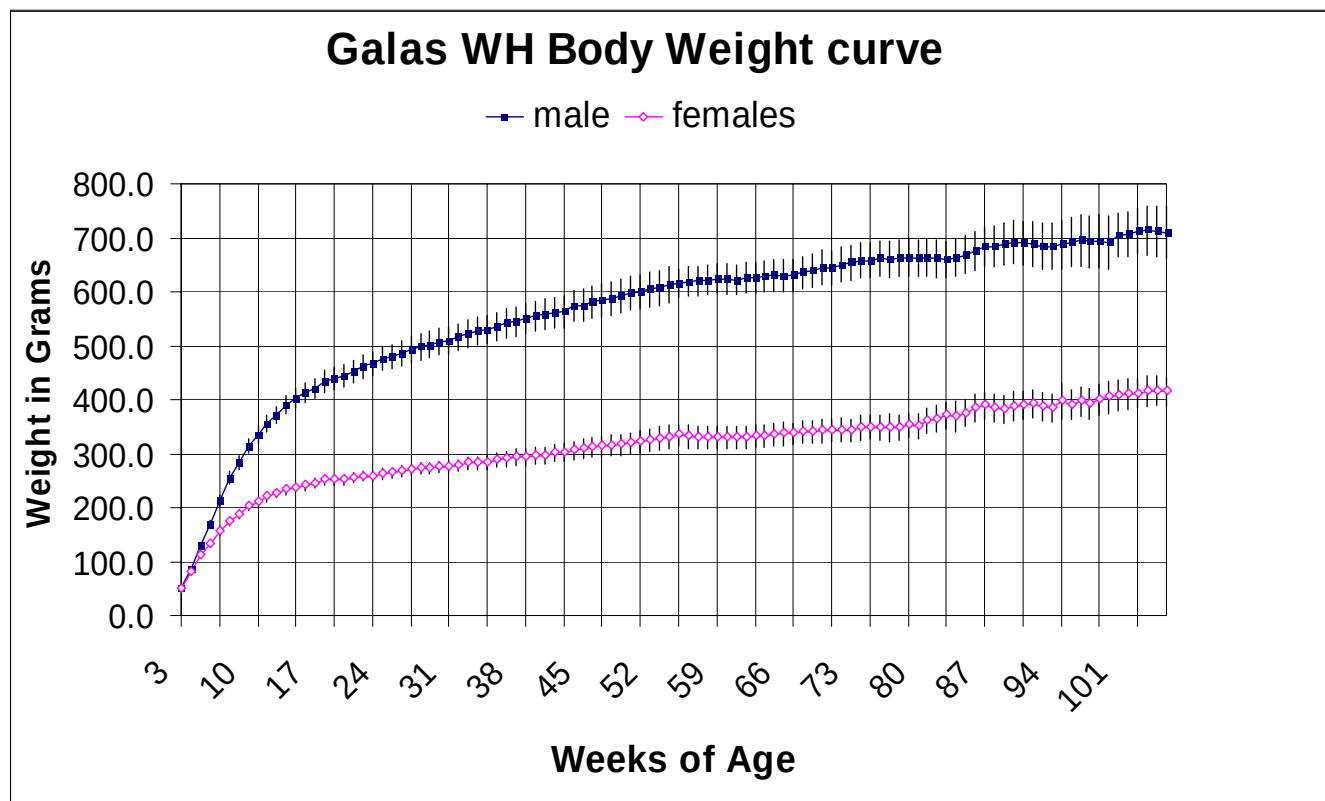
Figure 1b: Body weight curve, from Data of Table 1b.

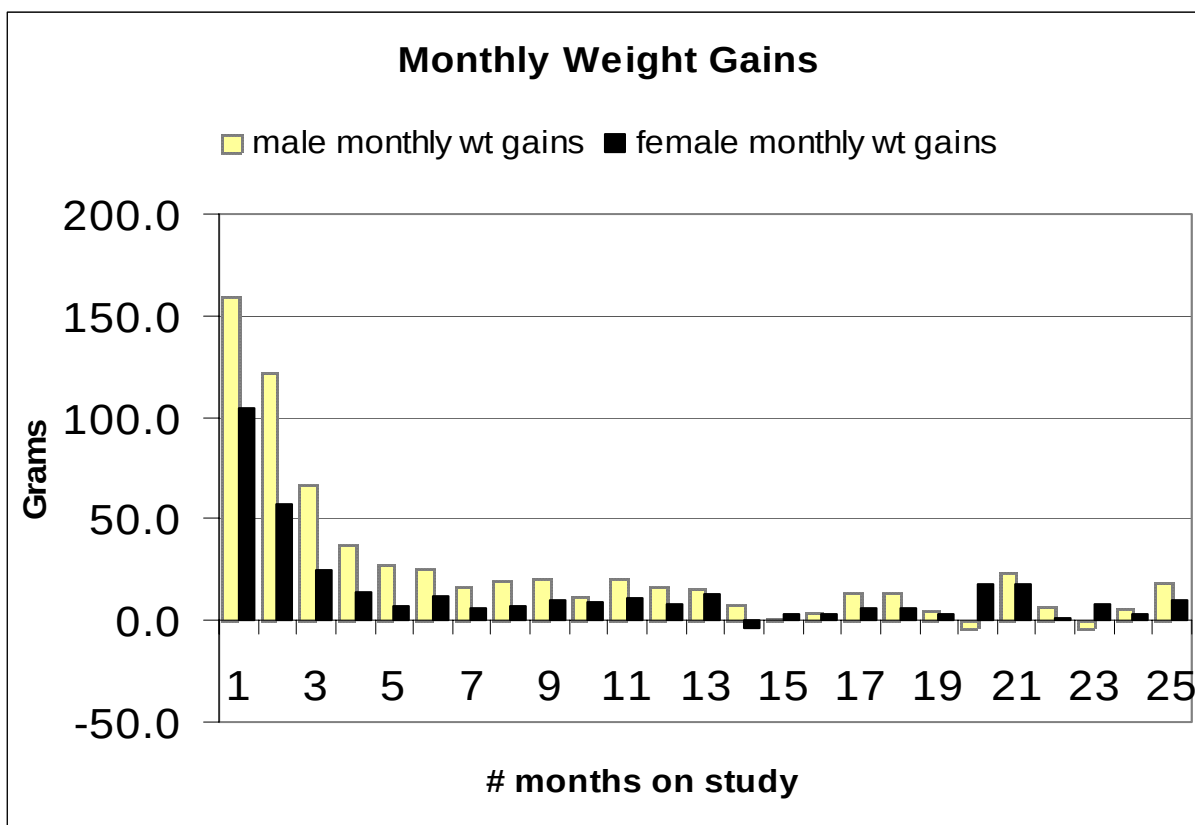
Figure 1c: Monthly weight gains

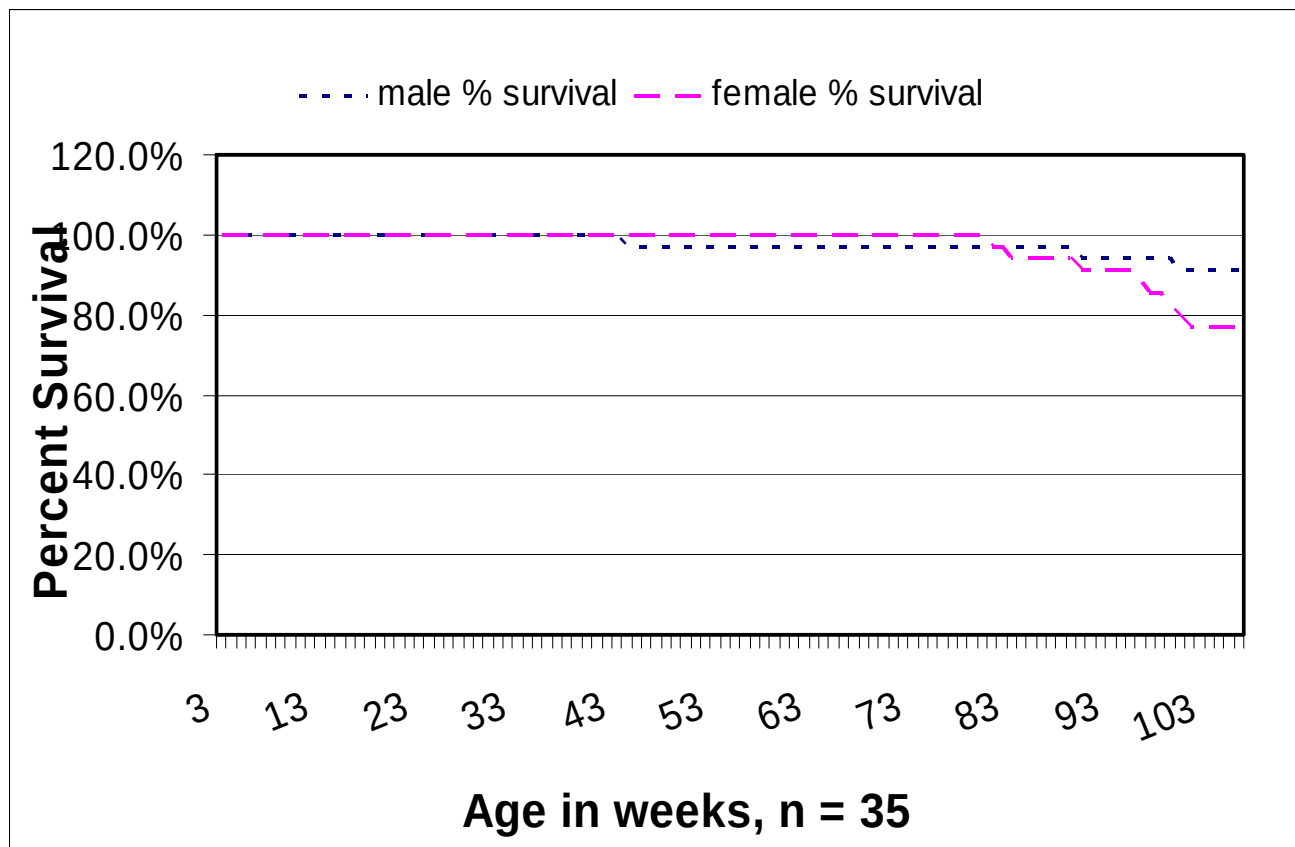
Figure 2: Survival rate

Table 2 Hematology

Item	Unit	5 weeks						10 weeks					
		Male			Female			Male			Female		
		n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
RBC	X10 ⁶ /μl	10	7.15	0.46	10	7.31	0.49	10	8.16	0.64	10	8.20	0.57
Hgb	g/dl	10	14.8	0.7	10	14.8	0.73	10	15.4	1.1	10	15.2	0.9
Hct	%	10	45.6	2.9	10	46.7	2.8	10	49.8	2.9	10	50.5	3.3
MCV	fl	10	64.0	2.0	10	63.8	1.2	10	61	0.8	10	61.6	1.5
MCH	pg	10	20.9	1.3	10	20.2	0.5	10	18.9	1.2	10	18.6	0.6
MCHC	%	10	32.5	1.6	10	31.7	0.4	10	30.9	1.2	10	30.2	0.8
WBC	X10 ³ /μl	10	6.9	1.5	10	6.8	1.6	10	10.8	2.4	10	7.1	1.5
Plat.	X10 ³ /μl	10	1184	183	10	1216.5	181	10	1109	83	10	1111	176

Item	Unit	19 weeks						21 weeks		
		Male			Female			Male		
		n	Mean	SD	n	Mean	SD	n	Mean	SD
RBC	X10 ⁶ /μl	8	9.42	0.33	10	8.27	0.62	3	8.54	0.28
Hgb	g/dl	8	15.9	0.9	10	14.7	0.8	3	15.0	0.2
Hct	%	8	52.5	2.9	10	48.5	3.1	3	48.7	0.8
MCV	fl	8	56.0	1.8	10	59.0	1.8	3	57	1.0
MCH	pg	8	16.8	0.7	10	17.8	0.7	3	17.6	0.6
MCHC	%	8	30.2	0.5	10	30.3	0.3	3	30.9	0.7
WBC	X10 ³ /μl	8	7.9	1.3	10	5.6	1.5	3	4.70	1.9
Plat.	X10 ³ /μl	8	919	140	10	959	165	3	809	28

Item	Unit	32 weeks					
		Male			Female		
		n	Mean	SD	n	Mean	SD
RBC	X10 ⁶ /μl	9	9.25	0.48	10	8.28	0.31
Hgb	g/dl	9	16.1	0.7	10	15.2	0.4
Hct	%	9	51.5	2.6	10	48.5	1.1
MCV	fl	9	56.0	1.4	10	59.0	1.4
MCH	pg	9	17.4	0.4	10	18.4	0.5
MCHC	%	9	31.2	0.3	10	31.4	0.4
WBC	X10 ³ /μl	9	7.0	0.8	10	5.2	1.1
Plat.	X10 ³ /μl	9	958	100	10	849	273

- Data collected August 19, 2003 to April 6, 2004.
- Blood samples collected from the abdominal aorta after carbon dioxide narcosis. Blood was placed into an EDTA coated, microtainer tube. Analyses performed by LabCorp, Research Triangle Park, NC.

Table 2 Hematology (Continued)

		106 weeks					
Item	Unit	Male			Female		
		n	Mean	SD	n	Mean	SD
RBC	$\times 10^6/\mu\text{l}$	8	8.21	2.31	10	8.10	0.39
Hgb	g/dl	8	14.4	3.6	10	15.4	1.1
Hct	%	8	49.7	13.0	10	52.1	3.1
MCV	fl	8	61.6	5.0	10	64.3	1.8
MCH	pg	8	17.9	2.0	10	19.0	1.0
MCHC	%	8	29.1	0.9	10	29.6	1.1
WBC	$\times 10^3/\mu\text{l}$	8	12.9	19.8	10	4.7	1.5
Plat.	$\times 10^3/\mu\text{l}$	8	856	160	10	805	162

Table 3 Serum Biochemistry

Items	Unit	21 weeks			55 weeks					
		Male			Male			Female		
		n	Mean	SD	n	Mean	SD	N	Mean	SD
ALT	U/l	3	22	2	15	63.1	57.7	15	36.0	10.9
AST	U/l	3	65	4	15	112.0	54.5	15	109.8	49.1
ALP	U/l	3	71	6	15	70.4	12.7	15	28.6	7.6
LDH	U/l	3	77	3	15	361.2	257.3	15	289.2	126.9
ChE	IU/l	3	QNS	N/a	15	542.6	181.5	15	2413.7	892.7
CPK	U/l	3	122.0	34.9	15	322.3	200.4	15	269.1	229.7
Glucose	mg/dl	3	122.7	25.7	15	339.9	196.7	15	318.1	121.0
Tot Chol.	mg/dl	3	66.3	12.9	15	84.0	18.9	15	82.9	32.3
Phospholipid	mg/dl	3	136.7	13.6	15	141.0	31.9	15	177.7	51.3
Triglycerides	mg/dl	3	86.7	26.7	15	173.8	82.1	15	116.5	75.3
NEFA	mEq/dl	3	0.6	0.1	15	0.9	0.2	15	0.8	0.2
Ca	mg/dl	3	11.9	0.2	15	13.4	1.9	15	12.7	2.5
Na	meq/l	3	151.7	2.1	15	148.7	5.6	15	148.1	9.5
K	meq/l	3	5.7	0.3	15	7.9	0.9	15	8.9	3.0
Cl	meq/l	3	100.7	2.3	15	100.5	3.0	15	101.0	6.3
PO ₄	mg/dl	3	9.2	0.4	15	9.3	1.5	15	7.9	2.5
Bilirubin	mg/dl	3	0.1	0.0	15	0.1	0.0	15	0.2	0.1
BUN	mg/dl	3	15.7	1.5	15	14.9	1.5	15	19.9	3.4
Creatinine	mg/dl	3	0.3	0.1	15	0.6	0.1	15	0.5	0.1
Total Prot.	g/dl	3	7.2	0.4	15	7.1	0.6	15	7.7	0.6
Albumin	g/dl	3	4.8	0.3	15	4.6	0.3	15	5.4	0.4
Globulin	g/dl	3	2.4	0.1	15	2.5	0.3	15	2.3	0.2
A/G	ratio	3	2.0	0.1	15	1.8	0.2	15	2.3	0.1

- Data collected August 19, 2003 to April 6, 2005. Serum biochemistry was not performed on group #2.
- Blood samples collected from the abdominal aorta under carbon dioxide narcosis after an overnight fasting period. Analyses performed by LabCorp, Research Triangle Park, NC.
- Analyses performed on a Hitachi 717, Roche Diagnostics, Indianapolis, IN, Cobas Mira, Roche Diagnostics, Indianapolis, IN and Helena REP, Helena, Beaumont, TX Agarose Gel.

Table 3 Serum Biochemistry

Item	Unit	106 weeks					
		Male			Female		
		N	Mean	SD	n	Mean	SD
ALT	U/l	10	24.6	7.7	10	28.2	10.2
AST	U/l	10	77.7	19.3	10	88.1	42.9
ALP	U/l	10	56.3	25.2	10	29.3	11.8
LDH	U/l	10	251.0	210.	10	105.0	61.4
ChE	IU/l	10	982.3	400. 2	10	1713.2	477.5
CPK	U/l	10	338.3	370. 8	10	105.2	68.1
Glucose	mg/dl	10	132.2	30.7	10	148.6	20.4
Tot Chol.	mg/dl	10	140.4	47.3	10	75.9	14.8
Phospholipid	mg/dl	10	222.9	65.9	10	153.7	22.8
Triglycerides	mg/dl	10	209.	127. 9	10	56.1	16.8
NEFA	mEq/dl		QNS	QNS	10	QNS	QNS
Ca	mg/dl	10	11.8	0.2	10	11.7	0.2
Na	mmol/l	10	151.3	3.4	10	148.1	2.1
K	mmol/l	10	6.5	1.75	10	6.9	0.9
Cl	mmol/l	10	105.0	4.0	10	103.5	1.7
PO ₄	mg/dl	10	10.0	5.5	10	7.4	0.9
Bilirubin	mg/dl	10	0.2	0.0	10	0.1	0.05
BUN	mg/dl	10	41.8	82.2	10	15.0	2.0
Creatinine	mg/dl	10	1.4	3.0	10	0.4	0.1
Total Prot.	g/dl	10	6.7	0.4	10	7.1	0.4
Albumin	g/dl	10	4.1	0.4	10	4.7	0.3
Globulin	g/dl	10	2.6	0.2	10	2.4	0.3
A/G	ratio	10	1.6	0.2	10	1.9	0.2

- Data collected August 19, 2003 to April 6, 2005
- Blood samples collected from the abdominal aorta under carbon dioxide narcosis after an overnight fasting period. Analyses performed by LabCorp, Research Triangle Park, NC.
- Analyses performed on a Hitachi 717, Roche Diagnostics, Indianapolis, IN, Cobas Mira, Roche Diagnostics, Indianapolis, IN and Helena REP, Helena, Beaumont, TX Agarose Gel.

Table 4 Urinalysis

		21 weeks				31 weeks				55 weeks	
		Male n = 3 %				Male n = 2 %				Male n = 15 %	Female n = 15 %
pH	5	0				0				0	0
	6	0				0				13	60
	6.5	67				50				67	40
	7	33				0				20	0
	7.5	0				50				0	0
	8	0				0				0	0
	8.5	0				0				0	0
Glucose (mg/dl)	-	100				100				100	100
	100 - 249	0				0				0	0
	250 - 499	0				0				0	0
	500 - 999	0				0				0	0
	1000 - 1999	0				0				0	0
	≥2000	0				0				0	0
Protein (mg/dl)	-	0				0				7	53
	Trace	33				100				47	40
	< 30	67				0				0	0
	30 - 99	0				0				47	7
	100 - 299	0				0				0	0
	300 - 1999	0				0				0	0
	≥2000	0				0				0	0
Urobilinogen (mg/dl)	≤ 0.2	100				50				100	100
	1	0				50				0	0
	2	0				0				0	0
	4	0				0				0	0
	≥8	0				0				0	0
Bilirubin	-	100				50				100	93
	+	0				50				0	7
	++	0				0				0	0
	+++	0				0				0	0
Ketone (mg/dl)	-	0				0				87	100
	5	0				50				13	0
	15	67				50				0	0
	40	33				0				0	0
	80	0				0				0	0
	≥160	0				0				0	0
Occult blood	-	100				100				53*	93
	Trace	0				0				7	0
	+	0				0				13	7
	++	0				0				0	0
	+++	0				0				20	0

*animal #24 had no result noted.

- Data collected August 19, 2003 to April 6, 2004
- Urine collected using metabolic cages.
- Analyses performed on Multistix®, Bayer Corp.

Table 4 Urinalysis

106 weeks				
		Male n = 10 %	Female n = 10 %	
PH	5	0	0	
	6	20	40	
	6.5	70	60	
	7	10	0	
	7.5	0	0	
	8	0	0	
	8.5	0	0	
Glucose (mg/dl)	-	100	100	
	100 - 249	0	0	
	250 - 499	0	0	
	500 - 999	0	0	
	1000 - 1999	0	0	
	≥2000	0	0	
Protein (mg/dl)	-	0	0	
	< 30	20	50	
	30 - 99	30	40	
	100 - 299	20	10	
	300 - 1999	30	0	
	≥2000	0	0	
Urobilinogen (mg/dl)	≤ 0.2	100	100	
	1	0	0	
	2	0	0	
	4	0	0	
	≥8	0	0	
Bilirubin	-	100	100	
	+	0	0	
	++	0	0	
	+++	0	0	
Ketone (mg/dl)	-	100	100	
	5	0	0	
	15	0	0	
	40	0	0	
	80	0	0	
	≥160	0	0	
Occult blood	-	70	80	
	+	0	10	
	++	20	10	
	+++	10	0	

- Data collected August 19, 2003 to April 6, 2005
- Spontaneously voided urine collected using metabolic cages.
- Analyses performed on Multistix®, Bayer Corp.

Table 5 Absolute and Relative Organ Weight

	Unit	21 weeks			34 weeks			55 weeks					
		Male			Male			Male			Female		
		n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
Body weight	g	3	424.2	28.9	2	546.1	32.5	15	595.2	101.2	15	325.4	58.1
Absolute organ weight:													
Brain	g	3	2.08	0.08	2	2.19	0.06	15	2.40	0.10	15	2.23	0.23
Pituitary gland	g	3	0.01	0.00	2	0.01	0.00	15	0.02	0.01	15	0.03	0.01
Heart	g	3	1.26	0.14	2	1.57	0.03	15	1.65	0.20	15	1.01	0.09
Lungs	g	3	1.85	0.22	2	1.86	0.21	15	2.05	0.25	15	1.67	0.28
Stomach	g	3	2.04	0.16	2	3.01	0.55	15	3.08	0.45	15	2.22	0.23
Liver	g	3	11.66	1.03	2	14.90	1.78	15	16.15	3.41	15	9.43	1.37
Spleen	g	3	0.73	0.09	2	0.78	0.03	15	0.98	0.13	15	0.70	0.08
Kidney R	g	3	1.36	0.10	2	1.49	0.09	15	1.77	0.17	15	1.24	0.14
Kidney L	g	3	1.40	0.02	2	1.40	0.08	15	1.76	0.17	15	1.21	0.13
Kidneys	g	3	2.76	0.12	2	2.89	0.08	15	3.53	0.34	15	2.45	0.27
Adrenal R	g	3	0.05	0.01	2	0.04	0.01	15	0.04	0.01	15	0.05	0.01
Adrenal L	g	3	0.04	0.02	2	0.04	0.00	15	0.13	0.31	15	0.05	0.01
Adrenals	g	3	0.09	0.02	2	0.08	0.00	15	0.17	0.32	15	0.10	0.01
Seminal vesicle	g	3	0.73	0.11	2	0.89	0.01	15	1.15	0.23		N/a	N/a
Uterus	g		N/a	N/a		N/a	N/a		N/a	N/a	15	0.95	0.19
Testis R	g	3	1.95	0.14	2	1.93	0.06	15	1.87	0.30		N/a	N/a
Testis L	g	3	1.97	0.21	2	1.95	0.15	15	1.94	0.28		N/a	N/a
Ovary R	g		N/a	N/a		N/a	N/a		N/a	N/a	15	0.08	0.02
Ovary L	g		N/a	N/a		N/a	N/a		N/a	N/a	15	0.08	0.02
Urinary bladder	g	3	0.16	0.09	2	0.16	0.05	15	0.24	0.10	15	0.11	0.02
Relative organ weight to body weight													
Brain	%	3	0.49		2	0.40		15	0.40		15	0.68	
Pituitary gland	%	3	0.00		2	0.00		15	0.00		15	0.01	
Heart	%	3	0.30		2	0.29		15	0.28		15	0.31	
Lung	%	3	0.44		2	0.34		15	0.34		15	0.51	
Stomach	%	3	0.48		2	0.55		15	0.52		15	0.68	
Liver	%	3	2.75		2	2.73		15	2.71		15	2.90	
Spleen	%	3	0.17		2	0.14		15	0.17		15	0.22	
Kidney R	%	3	0.46		2	0.27		15	0.30		15	0.38	
Kidney L	%	3	0.33		2	0.26		15	0.30		15	0.37	
Kidneys	%	3	0.65		2	0.53		15	0.60		15	0.74	
Adrenal R	%	3	0.01		2	0.01		15	0.01		15	0.01	
Adrenal L	%	3	0.01		2	0.01		15	0.02		15	0.01	
Adrenals	%	3	0.02		2	0.02		15	0.03		15	0.02	
Seminal vesicle	%	3	0.17		2	0.16		15	0.19			N/a	
Uterus	%		N/a			N/a			N/a		15	0.29	
Testis R	%	3	0.46		2	0.35		15	0.31			N/a	
Testis L	%	3	0.47		2	0.36		15	0.33			N/a	
Ovary R	%		N/a			N/a			N/a		15	0.02	
Ovary L	%		N/a			N/a			N/a		15	0.02	
Urinary bladder	%	3	0.04		2	0.03		15	0.04		15	0.04	

- Data collected August 19, 2003 to April 6, 2005
- Weights collected after overnight fasting period and exsanguination

Table 5 Absolute and Relative Organ Weight

	Unit	106 weeks					
		Male			Female		
		n	Mean	SD	n	Mean	SD
Body weight	g	10	637.8	96.7	10	372.3	38.5
Absolute organ weight							
Brain	g		2.298	0.287		2.075	0.219
Pituitary gland	g		0.027	0.024		0.068	0.152
Heart	g		1.735	0.422		1.113	0.134
Lung	g		2.507	0.870		1.732	0.260
Stomach	g		3.548	0.518		2.549	0.317
Liver	g		17.558	2.240		9.885	1.067
Spleen	g		1.467	0.308		0.869	0.113
Kidney R	g		2.312	0.847		1.213	0.114
Kidney L	g		2.232	0.754		1.198	0.115
Kidneys	g		4.544	1.601		2.411	0.229
Adrenal R	g		0.045	0.021		0.093	0.186
Adrenal L	g		0.052	0.023		0.093	0.171
Adrenals	g		0.097	0.044		0.186	0.357
Seminal vesicle	g		0.922	9.422		N/a	N/a
Uterus	g		Na	Na		0.772	0.279
Testis R	g		1.895	0.342		N/a	N/a
Testis L	g		1.858	0.373		N/a	N/a
Ovary R	g		Na	Na		0.125	0.048
Ovary L	g		Na	Na		0.143	0.083
Urinary bladder	g		0.278	0.078		0.202	0.060
Relative organ weight to body weight							
Brain	%		0.360			0.557	
Pituitary gland	%		0.004			0.018	
Heart	%		0.272			0.299	
Lung	%		0.393			0.465	
Stomach	%		0.556			0.685	
Liver	%		2.753			2.655	
Spleen	%		0.230			0.233	
Kidney R	%		0.362			0.326	
Kidney L	%		0.350			0.322	
Kidneys	%		0.712			0.648	
Adrenal R	%		0.007			0.025	
Adrenal L	%		0.008			0.025	
Adrenals	%		0.015			0.050	
Seminal vesicle	%		0.145			Na	
Uterus	%		Na			0.207	
Testis R	%		0.297			Na	
Testis L	%		0.291			Na	
Ovary R	%		Na			0.034	
Ovary L	%		Na			0.038	
Urinary bladder	%		0.044			0.054	

- Data collected August 19, 2003 to April 6, 2005
- Weights collected after overnight fasting period and exsanguination.

Table 6 Histopathological findings

Organ	Findings	21 week (n-3)	55 weeks (n-15)		106 weeks (n-10)	
		Male	Male	Female	Male	Female
Heart	- Degeneration, minimal to mild, myocardium and epicardium - Mineralization, minimal to mild, atrium, ventricle, aorta - No abnormal changes	3	8	15	3	10
Liver	- Hyperplasia, bile duct, multifocal, minimal to mild - Microgranulomas, multifocal, minimal - No abnormal changes	1	3	4	4	4
Kidney	- Mineralization, multifocal, minimal to mild, tubular epithelium, cortico-medullary junction - Nephrosis, chronic, interstitial, minimal to mild, cortex - No abnormal changes	2	11	11	6	6
Spleen	- Hematopoiesis, multifocal, mild, red pulp - Hyperplasia, lymphocytic, mild, periarterial sheaths, white pulp with hematopoiesis, mild to moderate, red pulp - Hemosiderosis, mild, red pulp - No abnormal changes	3	15	15	2	8
Testes	- Concretions, intratubular, multifocal, minimal, seminiferous tubules - No abnormal changes	3	1- right side only 14	-	8	-
Prostate Seminal Vesicles	No abnormal changes	3	15	-	2	-
Ovary	No abnormal changes	-	-	15	8	9
Uterus	No abnormal changes	-	-	15	8	9

Vagina	No abnormal changes	-	-	15	-	10
Urinary Bladder	No abnormal changes	3	15	15	10	10
Tumor Masses	- No abnormal changes - Tumor Masses	-	-	-	3 *	2 **

* Tumor Masses – Male – Epidermal Inclusion Cyst; Fibroma; Hemangioma/Sarcoma

** Tumor Masses – Female – Fibroadenoma of Mammary Gland; Epidermal Inclusion Cyst

- Data collected August 19, 2003 to April 6, 2005.
- Hematoxylin and eosin staining of tissues fixed in 10 % neutral buffered formalin
- Analysis performed at Taconic Anmed, Steven Stiefel, DVM.

Biological Background Data of BrlHan:WIST@Jcl(GALAS) Rats

Examined by CLEA Japan, Inc.

GALAS Study Group

2002

Environmental Conditions and Items for Biological Examinations

Environmental conditions (Barrier system)

Temperature	: 20 to 26°C
Humidity	: 50 to 70%
Air filter	: HEPA
Ventilation rate	: 10 to 15 times/hour
Illumination	: 200 lux/F1+800mm
Light cycle	: Light 12 hours /Dark 12 hours
Casing	: Reproduction = Econ cage (W345×D403×H177), pair mating : Rearing = Bracket cage (W260×D380×H200), group housing *3 to 5 weeks of age ;10 heads/cage *6 weeks of age and over ;5 heads/cage
Diet	: CE-2 (Autoclaved 121°C, 30 min), ad libitum
Water	: Chloride additional water (4 to 6ppm), ad libitum

Items for biological examinations

Figure 1.	Body weight curve (4 to 104 weeks of age)
Figure 2.	Survival rate curve (4 to 104 weeks of age)
Table 1.	Body weight (4 to 104 weeks of age)
Table 2.	Survival rate (4 to 104 weeks of age)
Table 3.	Hematology (5, 10, 18, 31, 52 and 104 weeks of age)
Table 4.	Clinical biochemistry (5, 10, 18, 31, 52 and 104 weeks of age)
Table 5.	Urinalysis (5, 10, 18, 31, 52 and 104 weeks of age)
Table 6.	Absolute and relative organ weight (5, 10, 18, 31, 52 and 104 weeks of age)
Table 7.	Histopathological findings (5, 10, 18 and 104 weeks of age)
Table 8.	Comparison of gene frequency (F0, F2 and F6)

Dept. of Examinations : Technical Service Dept. and Fuji Breeding Facility, CLEA Japan, Inc.

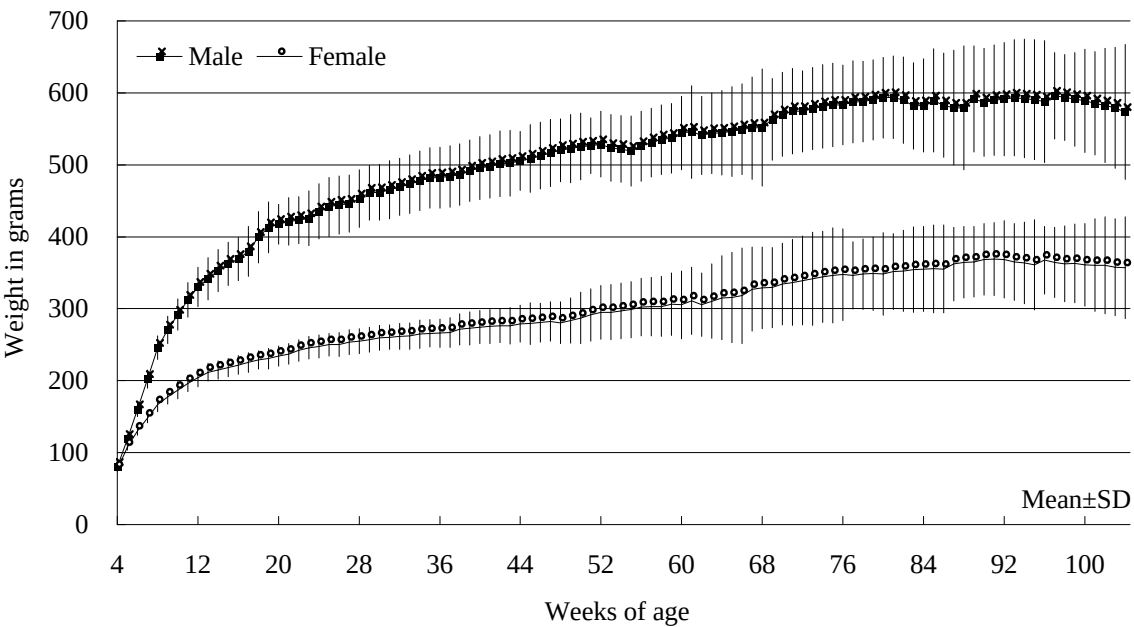


Figure 1. Body weight curve

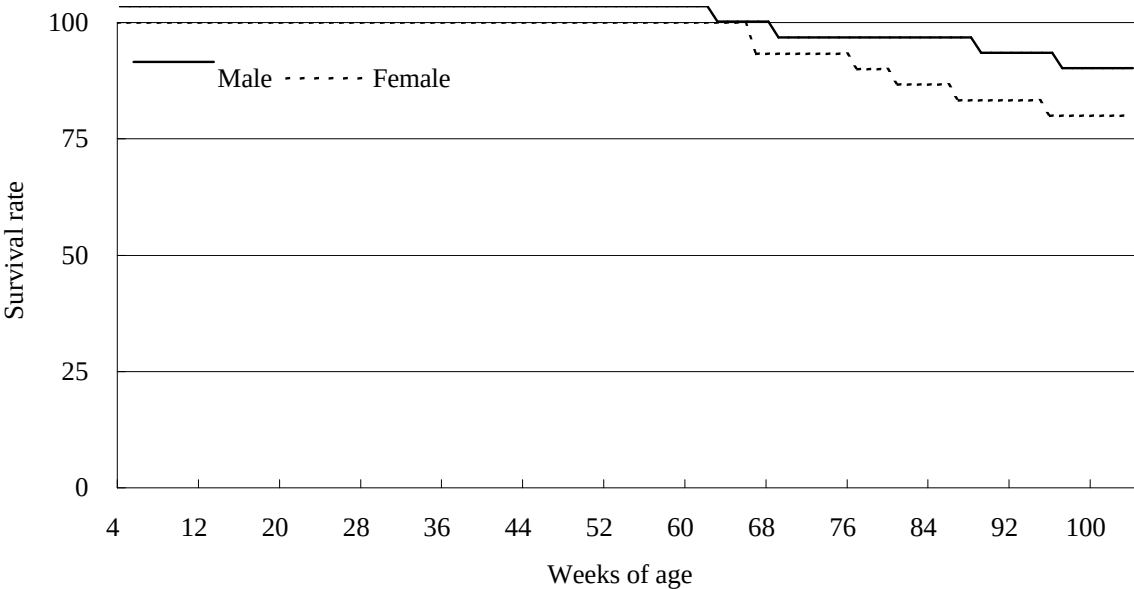


Figure 2. Survival rate curve

Table 1. Body weight

*Data collection period : 5-Jul-99 to 6-Jun-01

*Housing : group (3 to 5 weeks of age;10 heads/cage, 6 weeks of age and over;5 heads/cage)

Unit :g							Unit :g						
Weeks	Male			Female			Weeks	Male			Female		
	n	Mean	SD	n	Mean	SD		n	Mean	SD	n	Mean	SD
4	30	79.9	4.8	30	76.5	2.7	53	30	523.3	46.3	30	295.1	38.3
5	30	118.9	6.8	30	107.3	4.0	54	30	522	46.5	30	296.8	38.7
6	30	160.2	10.0	30	130.0	6.2	55	30	519.3	48.7	30	298.8	39.0
7	30	202.2	12.9	30	148.4	6.9	56	30	526.1	48.7	30	302.3	40.3
8	30	245.9	16.6	30	166.9	9.8	57	30	531.0	47.8	30	302.7	40.7
9	30	270.7	18.8	30	177.6	10.3	58	30	535.0	48.4	30	303.2	42.0
10	30	291.8	21.5	30	186.7	12.0	59	30	536.9	48.5	30	306.1	43.3
11	30	312.1	24.1	30	196.4	11.4	60	30	544.4	51.1	30	305.5	47.2
12	30	330.3	27.6	30	203.9	12.1	61	30	545.7	64.5	30	311.1	46.5
13	30	341.8	29.4	30	211.8	12.3	62	30	541.1	54.4	30	305.9	44.1
14	30	353.0	29.5	30	214.8	12.7	63	29	544.0	55.9	30	310.5	51.9
15	30	362.4	29.8	30	218.1	12.5	64	29	544.6	59.0	30	315.2	58.3
16	30	369.2	30.0	30	221.6	13.0	65	29	546.2	62.6	30	315.8	62.6
17	30	379.6	34.7	30	225.2	13.5	66	29	549.4	62.8	30	318.1	66.2
18	30	399.6	35.7	30	228.9	12.8	67	29	550.9	70.8	29	327.2	58.2
19	30	413.0	35.3	30	230.7	14.2	68	29	551.8	81.3	29	329.2	56.7
20	30	417.4	27.7	30	234.1	14.1	69	28	563.3	56.8	29	329.4	55.6
21	30	421.3	32.8	30	237.1	14.4	70	28	570.1	58.4	29	334.1	56.7
22	30	423.0	32.8	30	242.0	14.8	71	28	574.3	59.3	29	336.6	59.8
23	30	425.8	38.3	30	245.6	15.7	72	28	574.2	56.6	29	339.2	61.8
24	30	435.2	38.4	30	247.7	15.9	73	28	578.1	57.0	29	341.5	64.9
25	30	441.6	41.2	30	249.9	16.0	74	28	581.0	58.1	29	344.6	63.4
26	30	444.3	40.4	30	250.3	16.8	75	28	583.0	58.2	29	346.3	65.9
27	30	446.1	39.8	30	253.8	17.4	76	28	583.4	55.4	29	347.3	63.7
28	30	453.0	39.8	30	255.2	17.4	77	28	587.5	56.9	27	346.4	46.9
29	30	460.8	38.1	30	256.8	17.3	78	28	588.2	56.0	27	348.1	49.3
30	30	461.7	38.8	30	259.5	17.4	79	28	590.3	56.0	27	348.8	51.1
31	30	465.3	40.3	30	260.4	17.0	80	28	593.1	56.0	27	348.5	57.4
32	30	469.3	39.6	30	261.5	18.3	81	28	593.6	57.4	26	351.7	52.6
33	30	473.2	40.5	30	262.0	18.3	82	28	590.2	60.0	26	352.6	56.3
34	30	478.0	41.3	30	264.7	19.7	83	28	581.9	60.1	26	354.1	59.3
35	30	482.0	42.1	30	265.8	19.1	84	28	582.3	64.7	26	355.1	58.9
36	30	482.1	42.7	30	266.0	19.7	85	28	589.5	71.8	26	355.4	61.0
37	30	483.7	42.7	30	266.8	20.6	86	28	582.8	72.6	26	355.2	61.0
38	30	486.7	42.6	30	271.3	21.4	87	28	579.5	79.9	25	362.2	51.2
39	30	491.9	42.9	30	272.6	23.2	88	28	579.5	86.1	25	364.6	49.7
40	30	495.6	43.9	30	274.4	23.0	89	27	591.6	74.0	25	365.2	49.1
41	30	498.0	44.0	30	275.3	23.8	90	27	586.9	75.3	25	368.6	49.7
42	30	501.4	45.5	30	276.2	23.3	91	27	589.9	77.0	25	368.8	50.6
43	30	502.3	45.6	30	276.2	25.5	92	27	591.4	78.9	25	368.6	53.6
44	30	505.3	41.1	30	279.1	25.8	93	27	593.1	80.9	25	365.1	53.6
45	30	508.7	47.3	30	279.3	29.1	94	27	592.2	82.3	25	363.7	56.6
46	30	512.7	46.3	30	280.7	27.3	95	27	590.3	83.5	25	361.0	62.5
47	30	516.6	46.7	30	282.3	27.4	96	27	587.8	85.0	24	367.5	47.2
48	30	520.3	43.7	30	280.6	28.8	97	26	596.0	60.1	24	364.5	48.8
49	30	522.6	47.3	30	283.4	31.3	98	26	593.6	59.9	24	362.4	52.8
50	30	525.3	46.2	30	287.2	35.7	99	26	591.2	65.0	24	363.0	54.6
51	30	526.4	38.6	30	291.4	36.3	100	26	589.0	71.9	24	361.1	57.6
52	30	528.6	45.7	30	295.0	37.4	101	26	585.3	71.7	24	360.5	64.5
							102	26	582.6	79.2	24	360.5	67.6
							103	26	579.3	84.0	24	357.8	67.5
							104	26	573.4	93.9	24	357.1	70.7

Table 2. Survival rate

*Data collection period : 5-Jul-99 to 6-Jun-01

*Housing : group (3 to 5 weeks of age;10 heads/cage, 6 weeks of age and over;5 heads/cage)

Weeks	Male		Female	
	n	%	n	%
4	30	100.0	30	100.0
5	30	100.0	30	100.0
6	30	100.0	30	100.0
7	30	100.0	30	100.0
8	30	100.0	30	100.0
9	30	100.0	30	100.0
10	30	100.0	30	100.0
11	30	100.0	30	100.0
12	30	100.0	30	100.0
13	30	100.0	30	100.0
14	30	100.0	30	100.0
15	30	100.0	30	100.0
16	30	100.0	30	100.0
17	30	100.0	30	100.0
18	30	100.0	30	100.0
19	30	100.0	30	100.0
20	30	100.0	30	100.0
21	30	100.0	30	100.0
22	30	100.0	30	100.0
23	30	100.0	30	100.0
24	30	100.0	30	100.0
25	30	100.0	30	100.0
26	30	100.0	30	100.0
27	30	100.0	30	100.0
28	30	100.0	30	100.0
29	30	100.0	30	100.0
30	30	100.0	30	100.0
31	30	100.0	30	100.0
32	30	100.0	30	100.0
33	30	100.0	30	100.0
34	30	100.0	30	100.0
35	30	100.0	30	100.0
36	30	100.0	30	100.0
37	30	100.0	30	100.0
38	30	100.0	30	100.0
39	30	100.0	30	100.0
40	30	100.0	30	100.0
41	30	100.0	30	100.0
42	30	100.0	30	100.0
43	30	100.0	30	100.0
44	30	100.0	30	100.0
45	30	100.0	30	100.0
46	30	100.0	30	100.0
47	30	100.0	30	100.0
48	30	100.0	30	100.0
49	30	100.0	30	100.0
50	30	100.0	30	100.0
51	30	100.0	30	100.0
52	30	100.0	30	100.0
53	30	100.0	30	100.0
54	30	100.0	30	100.0
55	30	100.0	30	100.0
56	30	100.0	30	100.0
57	30	100.0	30	100.0
58	30	100.0	30	100.0
59	30	100.0	30	100.0
60	30	100.0	30	100.0
61	30	100.0	30	100.0
62	30	100.0	30	100.0
63	29	96.7	30	100.0
64	29	96.7	30	100.0
65	29	96.7	30	100.0
66	29	96.7	30	100.0
67	29	96.7	29	93.3
68	29	96.7	29	93.3
69	28	93.3	29	93.3
70	28	93.3	29	93.3
71	28	93.3	29	93.3
72	28	93.3	29	93.3
73	28	93.3	29	93.3
74	28	93.3	29	93.3
75	28	93.3	29	93.3
76	28	93.3	29	93.3
77	28	93.3	27	90.0
78	28	93.3	27	90.0
79	28	93.3	27	90.0
80	28	93.3	27	90.0
81	28	93.3	26	86.7
82	28	93.3	26	86.7
83	28	93.3	26	86.7
84	28	93.3	26	86.7
85	28	93.3	26	86.7
86	28	93.3	26	86.7
87	28	93.3	25	83.3
88	28	93.3	25	83.3
89	27	90.0	25	83.3
90	27	90.0	25	83.3
91	27	90.0	25	83.3
92	27	90.0	25	83.3
93	27	90.0	25	83.3
94	27	90.0	25	83.3
95	27	90.0	25	83.3
96	27	90.0	24	80.0
97	26	86.7	24	80.0
98	26	86.7	24	80.0
99	26	86.7	24	80.0
100	26	86.7	24	80.0
101	26	86.7	24	80.0
102	26	86.7	24	80.0
103	26	86.7	24	80.0
104	26	86.7	24	80.0

Table 3. Hematology

*Data collection period : 15-Sep-99 to 6-Jun-01

*Blood samples were drawn from the retro-orbital plexus using a micro-hematocrit glass capillary tube treated with EDTA.

*Method : Sysmex (TOA) F-800 Multi-parameter automated hematology analyzer

Items	Unit	5 weeks						10 weeks					
		Male			Female			Male			Female		
		n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
RBC	($10^{12}/l$)	10	6.29	0.26	10	6.26	0.24	10	9.03	0.27	10	8.19	0.24
Hgb	(g/l)	10	132	6	10	132	4	10	169	5	10	159	4
Hct	(l)	10	0.426	0.035	10	0.406	0.014	10	0.527	0.017	10	0.483	0.024
MCV	(fl)	10	67.6	3.4	10	64.9	2.3	10	58.5	0.8	10	59.0	1.8
MCH	(pg)	10	21.0	0.6	10	21.1	0.7	10	18.7	0.4	10	19.4	0.5
MCHC	(g/l)	10	311	13	10	326	3	10	320	7	10	330	13
WBC	($\times 10^9/l$)	10	6.3	1.4	10	5.6	1.1	10	7.5	2.1	10	6.6	0.9
Plat.	($\times 10^9/l$)	10	1214	151	10	1097	174	10	992	109	10	1010	113
RDW	(fl)	10	35.2	1.6	10	32.4	2.2	10	27.1	0.9	10	25.7	0.8
PDW	(fl)	10	7.6	0.3	10	7.7	0.3	10	8.5	0.4	10	8.6	0.6
MPV	(fl)	10	7.5	0.2	10	7.5	0.2	10	8.0	0.3	10	8.1	0.3

Items	Unit	18 weeks						31 weeks					
		Male			Female			Male			Female		
		n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
RBC	($10^{12}/l$)	10	9.83	0.45	10	8.74	0.25	10	10.16	0.51	10	9.10	0.46
Hgb	(g/l)	10	169	6	10	163	4	10	172	3	10	166	5
Hct	(l)	10	0.531	0.023	10	0.497	0.014	10	0.545	0.020	10	0.519	0.022
MCV	(fl)	10	54.1	1.5	10	56.9	1.1	10	53.7	1.5	10	57.1	1.9
MCH	(pg)	10	17.2	0.5	10	18.6	0.4	10	16.9	0.8	10	18.3	0.9
MCHC	(g/l)	10	319	7	10	327	5	10	315	12	10	320	9
WBC	($\times 10^9/l$)	10	8.0	1.9	10	7.0	1.6	10	7.7	2.6	10	4.9	0.4
Plat.	($\times 10^9/l$)	10	975	88	10	1025	139	10	941	80	10	1001	110
RDW	(fl)	10	25.6	0.6	10	24.6	0.6	10	25.8	0.5	10	25.4	0.6
PDW	(fl)	10	8.3	0.2	10	8.3	0.6	10	7.9	0.5	10	7.7	0.3
MPV	(fl)	10	7.9	0.1	10	8.0	0.4	10	7.7	0.3	10	7.6	0.2

Items	Unit	52 weeks						104 weeks					
		Male			Female			Male			Female		
		n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
RBC	($10^{12}/l$)	10	10.27	0.41	10	8.35	0.25	10	9.62	0.46	10	8.62	0.43
Hgb	(g/l)	10	176	5	10	162	5	10	166	7	10	161	6
Hct	(l)	10	0.564	0.020	10	0.507	0.016	10	0.520	0.022	10	0.512	0.018
MCV	(fl)	10	55.0	2.5	10	60.7	1.4	10	54.1	2.3	10	59.5	1.1
MCH	(pg)	10	17.1	0.5	10	19.5	0.5	10	17.3	0.8	10	18.7	0.5
MCHC	(g/l)	10	312	15	10	321	7	10	319	5	10	314	7
WBC	($\times 10^9/l$)	10	5.9	0.9	10	4.5	1.2	10	7.9	2.0	10	3.9	0.7
Plat.	($\times 10^9/l$)	10	929	115	10	849	87	10	955	139	10	960	93
RDW	(fl)	10	25.8	1.0	10	26.7	0.6	10	26.4	1.1	10	26.8	0.7
PDW	(fl)	10	8.6	0.4	10	8.1	0.3	8	9.1	0.9	0	- [¶]	0.0
MPV	(fl)	10	7.8	0.2	10	7.8	0.2	8	8.1	0.3	0	- [¶]	0.0

[¶] Analysis error

Table 4-1. Clinical biochemistry

*Data collection period : 21-Oct-99 to 8-Jun-01

*Blood samples were drawn from the abdominal aorta after 24 hours fasting period.

*Method : GPT, GOT, ALP, LDH, LAP, ChE, CPK, Glucose, TC, PL, TG, NEFA, Ca, IP, Bilirubin, BUN, Creatinine and TP ; Discrete type auto analyzer COBAS® MIRA, Nippon Roche K.K. Na and K ; Flame photometry MF-303, JASCO Corp. Cl ; Chloridometer CL-12, JASCO Corp. A/G, Albumin, a1-G, a2-G, β-G and ?-G ; Electrophoresis apparatus LP-225, Densitometer D-607, Cosmo co.,Ltd.

Items	Unit	5 weeks						10 weeks					
		Male			Female			Male			Female		
		n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
GPT	(U/l)	10	39.0	6.4	10	32.0	7.0	10	40.2	5.3	10	32.3	8.9
GOT [‡]	(U/l)	10	89.4	15.3	10	86.3	12.6	10	75.9	14.4	10	83.7	40.6
ALP	(U/l)	10	279.8	48.9	10	222.7	24.4	10	154.8	31.1	10	84.8	14.7
LDH [‡]	(U/l)	10	118.7	29.4	10	112.7	23.7	10	94.8	23.5	10	100.5	18.7
LAP	(U/l)	10	76.9	3.2	10	76.0	5.9	10	75.9	5.9	10	68.3	6.1
ChE	(IU/l)	10	53.0	9.6	10	74.4	20.1	2 [¶]	38.0	42.4	10	159.6	71.4
CPK [‡]	(U/l)	10	327.5	66.8	10	268.3	57.8	10	153.1	26.2	10	114.3	26.9
Glucose [‡]	(mmol/l)	10	6.3	1.1	10	5.3	0.5	10	8.8	1.6	10	6.9	1.1
TC	(mmol/l)	10	1.42	0.14	10	1.37	0.12	10	1.09	0.14	10	0.87	0.22
PL	(mmol/l)	10	2.21	0.17	10	2.31	0.25	10	1.96	0.16	10	2.14	0.44
TG	(mmol/l)	10	1.41	0.26	10	1.28	0.34	10	1.16	0.29	10	0.62	0.15
NEFA	(mmol/l)	10	1.22	0.30	10	1.12	0.16	10	0.74	0.15	10	0.71	0.13
Ca	(mmol/l)	10	2.57	0.11	10	2.62	0.09	10	2.77	0.20	10	2.74	0.11
Na	(mmol/l)	10	133	2	10	134	2	10	138	2	10	137	3
K	(mmol/l)	10	4.5	0.3	10	4.5	0.2	10	4.3	0.3	10	3.9	0.3
Cl	(mmol/l)	10	103	2	10	105	2	10	105	1	10	107	2
IP	(mmol/l)	10	3.20	0.25	10	3.20	0.31	10	2.70	0.16	10	2.54	0.34
Bilirubin	(μmol/l)	10	1.97	0.45	10	1.30	0.35	10	0.84	0.33	9	0.93	0.36
BUN	(mmol/l)	10	9.12	1.39	10	8.77	1.41	10	9.44	0.69	10	9.05	1.03
Creatinine	(μmol/l)	10	39.9	3.5	10	39.7	3.0	10	55.0	2.9	10	55.6	5.1
TP	(g/l)	10	58.5	2.2	10	58.7	2.2	10	71.3	5.5	10	73.5	6.1
A/G		10	1.55	0.08	10	1.59	0.14	10	1.20	0.07	10	1.22	0.08
Albumin	(%)	10	60.84	1.25	10	60.72	2.63	10	54.52	1.34	10	54.80	1.72
a1-G	(%)	10	16.56	0.72	10	15.62	0.93	10	20.39	1.45	10	19.88	1.20
a2-G	(%)	10	6.32	1.04	10	5.92	1.19	10	7.56	0.67	10	6.43	0.68
β-G	(%)	10	13.75	1.18	10	14.17	1.56	10	14.54	0.56	10	15.05	1.22
?-G	(%)	10	2.53	0.82	10	3.57	2.05	10	2.99	0.42	10	3.84	0.89
Albumin	(g/l)	10	35.3	1.2	10	35.3	2.3	10	38.9	3.1	10	40.3	3.9
a1-G	(g/l)	10	9.6	0.5	10	9.1	0.8	10	14.5	1.0	10	14.6	1.7
a2-G	(g/l)	10	3.7	0.6	10	3.4	0.7	10	5.4	0.9	10	4.7	0.6
β-G	(g/l)	10	8.0	0.8	10	8.2	0.9	10	10.4	1.0	10	11.1	1.3
?-G	(g/l)	10	1.5	0.5	10	2.1	1.1	10	2.1	0.4	10	2.8	0.4

[‡] Heparinized plasma.[¶] 8/10 samples were analysis error.

Table 4-2. Clinical biochemistry

*Data collection period : 21-Oct-99 to 16-Jun-00

*Blood samples were drawn from the abdominal aorta after 24 hours fasting period.

*Method : GPT, GOT, ALP, LDH, LAP, ChE, CPK, Glucose, TC, PL, TG, NEFA, Ca, IP, Bilirubin, BUN, Creatinine and TP ; Discrete type auto analyzer COBAS® MIRA, Nippon Roche K.K. Na and K ; Flame photometry MF-303, JASCO Corp. Cl ; Chloridometer CL-12, JASCO Corp. A/G, Albumin, a1-G, a2-G, β-G and ?-G ; Electrophoresis apparatus LP-225, Densitometer D-607, Cosmo co.,Ltd.

Items	Unit	18 weeks						31 weeks					
		Male			Female			Male			Female		
		n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
GPT	(U/l)	10	38.7	5.6	10	31.4	5.8	10	44.5	6.7	10	43.0	19.8
GOT [‡]	(U/l)	10	74.8	10.0	10	77.6	17.9	10	65.7	9.4	10	69.9	27.0
ALP	(U/l)	10	108.7	25.7	10	38.3	7.7	10	94.4	18.8	10	28.7	7.9
LDH [‡]	(U/l)	10	113.2	18.9	10	146.8	80.9	10	124.2	42.3	10	163.1	171.6
LAP	(U/l)	10	76.5	7.5	10	60.6	5.7	10	65.0	5.7	10	56.2	5.8
ChE	(IU/l)	10	18.4	5.3	10	408.3	94.3	10	36.3	21.3	10	590.0	147.5
CPK [‡]	(U/l)	10	105.0	17.1	10	155.6	177.5	10	124.1	36.9	10	101.2	68.2
Glucose [‡]	(mmol/l)	10	10.1	1.0	10	7.1	0.8	10	7.7	0.9	10	6.4	0.6
TC	(mmol/l)	10	1.33	0.33	10	1.04	0.24	10	1.49	0.15	10	1.36	0.29
PL	(mmol/l)	10	2.46	0.52	10	2.33	0.41	10	2.40	0.24	10	2.66	0.49
TG	(mmol/l)	10	1.42	0.57	10	0.68	0.21	10	1.41	0.46	10	0.63	0.14
NEFA	(mmol/l)	10	0.72	0.19	10	0.79	0.19	10	0.69	0.15	10	0.78	0.08
Ca	(mmol/l)	10	2.77	0.08	10	2.59	0.08	10	2.86	0.15	10	2.80	0.16
Na	(mmol/l)	10	142	2	10	140	3	10	142	7	10	142	4
K	(mmol/l)	10	4.4	0.3	10	4.1	0.3	10	4.4	0.3	10	3.8	0.3
Cl	(mmol/l)	10	104	1	10	106	2	10	102	4	10	103	3
IP	(mmol/l)	10	2.06	0.30	10	2.06	0.20	10	1.85	0.30	10	1.83	0.41
Bilirubin	(μmol/l)	10	1.83	0.48	10	2.09	0.59	10	1.03	0.27	10	1.28	0.44
BUN	(mmol/l)	10	8.19	1.15	10	7.73	0.67	10	8.08	0.94	10	8.68	0.84
Creatinine	(μmol/l)	10	61.1	4.4	10	56.0	3.8	10	61.3	5.8	10	58.9	4.8
TP	(g/l)	10	78.8	5.3	10	74.8	3.8	10	75.7	4.6	10	73.5	7.7
A/G		10	1.05	0.05	10	1.18	0.06	10	0.95	0.05	10	1.18	0.09
Albumin	(%)	10	51.15	1.28	10	54.14	1.29	10	48.81	1.36	10	54.09	1.87
a1-G	(%)	10	19.33	0.98	10	18.73	1.12	10	21.40	1.54	10	18.66	1.43
a2-G	(%)	10	7.30	1.33	10	5.82	0.55	10	6.64	1.39	10	5.04	1.29
β-G	(%)	10	17.10	0.39	10	14.69	0.97	10	18.79	0.71	10	15.52	1.43
?-G	(%)	10	5.12	0.52	10	6.62	0.77	10	4.44	0.83	10	6.69	0.97
Albumin	(g/l)	10	40.3	2.6	10	40.5	2.5	10	36.9	2.3	10	39.8	4.4
a1-G	(g/l)	10	15.3	1.7	10	14.0	1.3	10	16.2	1.3	10	13.8	2.0
a2-G	(g/l)	10	5.7	1.0	10	4.3	0.4	10	5.1	1.3	10	3.7	1.1
β-G	(g/l)	10	13.5	1.1	10	11.0	0.6	10	14.2	0.9	10	11.4	1.4
?-G	(g/l)	10	4.0	0.6	10	4.9	0.6	10	3.4	0.7	10	4.9	0.7

[‡] Heparinized plasma.

Table 4-3. Clinical biochemistry

*Data collection period : 21-Oct-99 to 16-Jun-00

*Blood samples were drawn from the abdominal aorta after 24 hours fasting period.

*Method : GPT, GOT, ALP, LDH, LAP, ChE, CPK, Glucose, TC, PL, TG, NEFA, Ca, IP, Bilirubin, BUN, Creatinine and TP ; Discrete type auto analyzer COBAS[®] MIRA, Nippon Roche K.K. Na and K ; Flame photometry MF-303, JASCO Corp. Cl ; Chloridometer CL-12, JASCO Corp. A/G, Albumin, a1-G, a2-G, β-G and ?-G ; Electrophoresis apparatus LP-225, Densitometer D-607, Cosmo co.,Ltd.

Items	Unit	52 weeks						104 weeks					
		Male			Female			Male			Female		
		n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
GPT	(U/l)	10	81.74 [¶]	125.4	10	33.7	8.5	10	44.7	17.4	10	45.7	18.0
GOT [‡]	(U/l)	10	123.3 [¶]	150.7	10	64.7	10.6	10	63.4	19.8	10	81.6	24.1
ALP	(U/l)	10	76.7	21.8	10	24.3	7.6	10	75.8	24.4	10	19.2	6.7
LDH [‡]	(U/l)	10	265.1 [¶]	230.8	10	139.5	50.3	10	144.5	62.0	10	122.7	41.4
LAP	(U/l)	10	69.7	9.5	10	54.7	5.8	10	71.1	6.0	10	48.2	4.1
ChE	(IU/l)	10	65.7	20.9	10	536.1	105.4	10	100.7	81.9	10	357.6	117.7
CPK [‡]	(U/l)	10	118.3	28.0	10	80.1	12.4	10	206.1	74.5	10	104.1	37.4
Glucose [‡]	(mmol/l)	10	6.6	0.8	10	5.1	0.8	10	7.4	0.8	10	6.1	0.9
TC	(mmol/l)	10	1.59	0.55	10	1.22	0.32	10	2.56	0.80	10	1.16	0.31
PL	(mmol/l)	10	2.18	0.79	10	2.47	0.62	10	4.54	0.80	10	2.68	0.68
TG	(mmol/l)	10	1.26	0.38	10	0.62	0.19	10	3.37	1.62	10	0.97	0.51
NEFA	(mmol/l)	10	0.75	0.10	10	0.76	0.21	10	0.61	0.17	10	0.83	0.11
Ca	(mmol/l)	10	2.78	0.19	10	2.87	0.14	10	3.04	0.23	10	2.63	0.15
Na	(mmol/l)	10	138	6	10	135	3	10	131	3	10	135	4
K	(mmol/l)	10	4.3	0.3	10	4.0	0.9	10	3.9	0.3	10	3.8	0.4
Cl	(mmol/l)	10	101	2	10	103	3	10	97	2	10	100	3
IP	(mmol/l)	10	1.54	0.23	10	1.67	0.40	10	1.76	0.26	10	1.49	0.24
Bilirubin	(μ mol/l)	10	1.57	0.98	10	2.00	0.49	10	1.64	0.46	10	2.34	0.48
BUN	(mmol/l)	10	6.18	0.87	10	7.35	1.16	10	7.23	1.13	10	5.50	0.80
Creatinine	(μ mol/l)	10	63.1	6.9	10	64.2	4.7	10	72.8	10.5	10	57.5	4.3
TP	(g/l)	10	72.6	5.7	10	74.8	4.0	10	80.1	7.3	10	71.9	5.0
A/G		10	0.91	0.08	10	1.20	0.11	10	0.80	0.11	10	1.13	0.12
Albumin	(%)	10	47.61	2.03	10	54.49	2.44	10	44.24	3.51	10	52.83	2.75
a1-G	(%)	10	20.92	1.20	10	18.24	1.43	10	24.64	4.95	10	17.10	1.43
a2-G	(%)	10	7.09	1.22	10	4.76	0.37	10	7.40	0.94	10	6.50	0.85
β-G	(%)	10	18.96	1.07	10	15.73	1.12	10	18.89	3.62	10	16.39	1.85
?-G	(%)	10	5.42	0.85	10	6.78	0.76	10	4.83	1.39	10	7.18	1.75
Albumin	(g/l)	10	34.5	2.9	10	40.8	2.7	10	35.4	4.4	10	37.9	2.9
a1-G	(g/l)	10	15.2	1.6	10	13.6	1.3	10	19.7	4.1	10	12.3	1.4
a2-G	(g/l)	10	5.1	0.9	10	3.6	0.2	10	5.9	0.8	10	4.7	0.8
β-G	(g/l)	10	13.8	1.3	10	11.8	1.2	10	15.1	3.3	10	11.8	1.9
?-G	(g/l)	10	3.9	0.8	10	5.1	0.7	10	3.9	1.3	10	5.1	1.2

[‡] Heparinized plasma.[¶] 1/10 sample had abnormal high value.

Table 5-1. Urinalysis

*Data collection period : 14-Sep-99 to 6-Jun-01

*Method : Urin test strip (URiACE(R)-M), Terumo Corp.

Items		5 weeks		10 weeks		18 weeks	
		Male	Female	Male	Female	Male	Female
		n=10 %	n=10 %	n=10 %	n=10 %	n=10 %	n=10 %
pH	5	10	0	0	10	0	10
	6	10	20	0	10	20	50
	7	80	70	70	50	50	40
	8	0	10	30	30	30	0
	9	0	0	0	0	0	0
Glucose ^{‡1}	-	100	100	100	100	100	100
	±	0	0	0	0	0	0
	+	0	0	0	0	0	0
	++	0	0	0	0	0	0
	+++	0	0	0	0	0	0
Protein ^{‡2}	-	0	20	0	0	0	10
	±	90	70	60	50	60	90
	+	10	10	40	50	30	0
	++	0	0	0	0	10	0
	+++	0	0	0	0	0	0
Urobilinogen ^{‡3}	±	10	30	20	60	70	70
	+	90	70	80	40	30	30
	++	0	0	0	0	0	0
	+++	0	0	0	0	0	0
Bilirubin ^{‡4}	-	100	100	100	100	100	100
	+	0	0	0	0	0	0
	++	0	0	0	0	0	0
	+++	0	0	0	0	0	0
Ketone body ^{‡5}	-	100	100	80	100	50	70
	+	0	0	20	0	50	30
	++	0	0	0	0	0	0
	+++	0	0	0	0	0	0
Occult blood ^{‡6}	-	90	70	80	80	60	100
	+	10	30	20	20	30	0
	++	0	0	0	0	10	0
	+++	0	0	0	0	0	0

^{‡1} ± 50mg/dl, + 150mg/dl, ++ 500mg/dl, +++ 2000mg/dl^{‡2} ± 15mg/dl, + 30mg/dl, ++ 100mg/dl, +++ 250mg/dl^{‡3} ± 0.5mg/dl, + 2mg/dl, ++ 4mg/dl, +++ 8mg/dl^{‡4} + 0.5mg/dl, ++ 1.0mg/dl, +++ 2.5mg/dl^{‡5} + 10mg/dl, ++ 50mg/dl, +++ 100mg/dl^{‡6} + 10RBC/μl, ++ 50RBC/μl, +++ 250RBC/μl

Table 5-2. Urinalysis

*Data collection period : 14-Sep-99 to 13-Jun-00

*Method : Urin test strip (URIACE(R)-M), Terumo Corp.

Items		31 weeks		52 weeks		104 weeks	
		Male n=10 %	Female n=10 %	Male n=10 %	Female n=10 %	Male n=10 %	Female n=10 %
pH	5	0	0	10	0	0	0
	6	30	30	0	60	30	60
	7	50	70	70	40	50	30
	8	20	0	20	0	20	10
	9	0	0	0	0	0	0
Glucose ^{‡1}	-	100	100	100	100	100	100
	±	0	0	0	0	0	0
	+	0	0	0	0	0	0
	++	0	0	0	0	0	0
	+++	0	0	0	0	0	0
Protein ^{‡2}	-	0	10	0	0	0	0
	±	40	50	70	10	0	20
	+	40	40	30	80	0	30
	++	20	0	0	10	10	20
	+++	0	0	0	0	90	30
Urobilinogen ^{‡3}	±	100	70	80	60	80	100
	+	0	30	20	40	20	0
	++	0	0	0	0	0	0
	+++	0	0	0	0	0	0
Bilirubin ^{‡4}	-	100	100	100	100	100	100
	+	0	0	0	0	0	0
	++	0	0	0	0	0	0
	+++	0	0	0	0	0	0
Ketone body ^{‡5}	-	50	60	90	10	30	40
	+	50	40	10	90	70	60
	++	0	0	0	0	0	0
	+++	0	0	0	0	0	0
Occult blood ^{‡6}	-	90	100	80	60	90	70
	+	10	0	20	40	0	0
	++	0	0	0	0	0	0
	+++	0	0	0	0	10	30

^{‡1} ± 50mg/dl, + 150mg/dl, ++ 500mg/dl, +++ 2000mg/dl^{‡2} ± 15mg/dl, + 30mg/dl, ++ 100mg/dl, +++ 250mg/dl^{‡3} ± 0.5mg/dl, + 2mg/dl, ++ 4mg/dl, +++ 8mg/dl^{‡4} + 0.5mg/dl, ++ 1.0mg/dl, +++ 2.5mg/dl^{‡5} + 10mg/dl, ++ 50mg/dl, +++ 100mg/dl^{‡6} + 10RBC/μl, ++ 50RBC/μl, +++ 250RBC/μl

Table 6-1. Absolute and relative organ weight

*Data collection period : 17-Sep-99 to 8-Jun-01

*Method : B.W. and organ weight measurement were performed after 24-hour fasting period.

	Unit	5 weeks						10 weeks					
		Male			Female			Male			Female		
		n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
Body weight	(g)	10	109.3	6.44	10	94.6	6.57	10	283.7	11.26	10	174.5	11.66
Absolute organ weight													
Brain	(mg)	10	1619	96	10	1568	132	10	1894	94	10	1778	138
Pituitary gland	(mg)	10	4.2	0.7	10	4.7	0.7	10	8.4	1.9	10	10.5	2.3
Heart	(mg)	10	437.2	38.0	10	373.0	36.6	10	862.6	84.7	10	544.6	51.3
Lung	(mg)	10	597.8	26.8	10	524.4	32.8	10	1009.8	76.1	10	778.7	89.6
Stomach	(mg)	10	745.5	65.3	10	701.0	80.4	10	1374.6	175.9	10	1021.2	171.4
Liver	(mg)	10	3820	256	10	3326	467	10	8051	508	10	5159	531
Spleen	(mg)	10	383.2	37.6	10	296.9	57.4	10	658.4	123.1	10	421.5	41.6
Kidney(R)	(mg)	10	531.5	59.3	10	461.0	40.3	10	1024.4	161.1	10	691.8	85.6
Kidney(L)	(mg)	10	522.4	33.7	10	451.0	28.8	10	989.7	129.2	10	661.2	71.6
Kidneys	(mg)	10	1053.9	87.2	10	912.0	68.1	10	2014.1	281.9	10	1353.1	153.7
Adrenal(R)	(mg)	10	15.7	3.2	10	15.1	3.8	10	28.0	5.0	10	33.2	4.4
Adrenal(L)	(mg)	10	18.2	2.8	10	16.2	2.9	10	30.2	3.0	10	36.7	5.1
Adrenals	(mg)	10	33.9	5.3	10	31.2	5.9	10	58.3	7.6	10	69.9	9.0
Seminal vesicle	(mg)	10	38.4	9.3	-	-	-	10	507.5	104.4	-	-	-
Uterus	(mg)	-	-	-	10	157.9	68.1	-	-	-	10	395.5	99.6
Testis(R)	(mg)	10	581.9	36.9	-	-	-	10	1574.3	120.6	-	-	-
Testis(L)	(mg)	10	602.3	40.6	-	-	-	10	1643.3	167.1	-	-	-
Ovary(R)	(mg)	-	-	-	10	21.9	3.4	-	-	-	10	52.7	11.8
Ovary(L)	(mg)	-	-	-	10	27.0	4.1	-	-	-	10	54.9	10.9
Urinary bladder	(mg)	10	51.7	5.2	10	43.7	7.8	10	85.6	22.0	10	61.2	10.2
Relative organ weight													
Brain	(%)	10	1.486	0.132	10	1.663	0.151	10	0.669	0.042	10	1.020	0.063
Pituitary gland	(%)	10	0.004	0.001	10	0.005	0.001	10	0.003	0.001	10	0.006	0.001
Heart	(%)	10	0.400	0.031	10	0.395	0.033	10	0.304	0.022	10	0.312	0.020
Lung	(%)	10	0.548	0.023	10	0.555	0.023	10	0.356	0.022	10	0.446	0.034
Stomach	(%)	10	0.684	0.073	10	0.741	0.065	10	0.485	0.061	10	0.583	0.073
Liver	(%)	10	3.495	0.130	10	3.518	0.432	10	2.839	0.165	10	2.952	0.181
Spleen	(%)	10	0.351	0.034	10	0.315	0.060	10	0.232	0.039	10	0.242	0.022
Kidney(R)	(%)	10	0.486	0.046	10	0.487	0.021	10	0.360	0.047	10	0.395	0.025
Kidney(L)	(%)	10	0.478	0.027	10	0.477	0.019	10	0.348	0.034	10	0.378	0.021
Kidneys	(%)	10	0.965	0.066	10	0.965	0.036	10	0.708	0.077	10	0.774	0.042
Adrenal(R)	(%)	10	0.014	0.003	10	0.016	0.004	10	0.010	0.002	10	0.019	0.002
Adrenal(L)	(%)	10	0.017	0.002	10	0.017	0.003	10	0.011	0.001	10	0.021	0.002
Adrenals	(%)	10	0.031	0.005	10	0.033	0.006	10	0.021	0.003	10	0.040	0.004
Seminal vesicle	(%)	10	0.035	0.008	-	-	-	10	0.178	0.031	-	-	-
Uterus	(%)	-	-	-	10	0.165	0.067	-	-	-	10	0.226	0.055
Testis(R)	(%)	10	0.534	0.039	-	-	-	10	0.555	0.038	-	-	-
Testis(L)	(%)	10	0.552	0.037	-	-	-	10	0.579	0.056	-	-	-
Ovary(R)	(%)	-	-	-	10	0.023	0.003	-	-	-	10	0.030	0.006
Ovary(L)	(%)	-	-	-	10	0.029	0.005	-	-	-	10	0.031	0.006
Urinary bladder	(%)	10	0.047	0.005	10	0.046	0.006	10	0.030	0.007	10	0.035	0.006

Table 6-2. Absolute and relative organ weight

*Data collection period : 17-Sep-99 to 16-Jun-00

*Method : B.W. and organ weight measurement were performed after 24-hour fasting period.

	Unit	18 weeks						31 weeks					
		Male			Female			Male			Female		
		n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
Body weight	(g)	10	383.5	24.03	10	220.9	16.04	10	442.0	41.98	10	236.0	15.21
Absolute organ weight													
Brain	(mg)	10	1896	136	10	1730	115	10	2070	156	10	1969	100
Pituitary gland	(mg)	10	9.7	1.0	10	12.6	3.5	10	8.8	1.4	10	14.1	4.3
Heart	(mg)	10	950.9	68.6	10	625.3	58.0	10	1044.4	130.4	10	682.9	39.7
Lung	(mg)	10	1075.7	62.7	10	844.8	48.9	10	1103.2	102.3	10	855.7	66.4
Stomach	(mg)	10	1585.7	228.7	10	1225.7	224.8	10	1768.1	246.7	10	1446.4	360.7
Liver	(mg)	10	9827	777	10	5299	599	10	10546	1369	10	5719	617
Spleen	(mg)	10	654.6	57.6	10	435.6	56.0	10	688.8	97.0	10	529.1	56.1
Kidney(R)	(mg)	10	1158.1	92.8	10	714.0	73.8	10	1187.6	129.7	10	757.6	77.4
Kidney(L)	(mg)	10	1103.7	103.3	10	678.2	77.5	10	1127.9	106.0	10	709.4	79.1
Kidneys	(mg)	10	2261.7	185.8	10	1392.2	145.7	10	2315.5	222.8	10	1467.0	153.2
Adrenal(R)	(mg)	10	27.5	3.4	10	32.7	5.2	10	24.8	2.7	10	31.2	5.1
Adrenal(L)	(mg)	10	30.1	3.9	10	37.8	6.7	10	29.4	4.1	10	33.6	4.7
Adrenals	(mg)	10	57.6	6.7	10	70.5	10.7	10	54.2	6.6	10	64.8	9.3
Seminal vesicle	(mg)	10	948.3	178.6	-	-	-	10	1049.1	234.8	-	-	-
Uterus	(mg)	-	-	-	10	471.3	117.3	-	-	-	10	630.1	303.1
Testis(R)	(mg)	10	1672.0	68.9	-	-	-	10	1731.8	146.3	-	-	-
Testis(L)	(mg)	10	1692.3	75.9	-	-	-	10	1752.8	156.8	-	-	-
Ovary(R)	(mg)	-	-	-	10	58.6	13.0	-	-	-	10	58.3	8.5
Ovary(L)	(mg)	-	-	-	10	57.7	12.4	-	-	-	10	56.5	10.6
Urinary bladder	(mg)	10	104.8	16.8	10	62.4	10.9	10	99.9	23.6	10	55.6	10.8
Relative organ weight													
Brain	(%)	10	0.496	0.039	10	0.785	0.056	10	0.472	0.053	10	0.836	0.053
Pituitary gland	(%)	10	0.003	0.000	10	0.006	0.001	10	0.002	0.000	10	0.006	0.002
Heart	(%)	10	0.248	0.016	10	0.283	0.022	10	0.236	0.019	10	0.290	0.011
Lung	(%)	10	0.281	0.018	10	0.383	0.018	10	0.250	0.012	10	0.362	0.010
Stomach	(%)	10	0.413	0.050	10	0.554	0.079	10	0.399	0.037	10	0.609	0.127
Liver	(%)	10	2.563	0.135	10	2.400	0.218	10	2.380	0.121	10	2.422	0.193
Spleen	(%)	10	0.171	0.013	10	0.197	0.020	10	0.157	0.023	10	0.225	0.028
Kidney(R)	(%)	10	0.302	0.019	10	0.323	0.015	10	0.269	0.021	10	0.321	0.021
Kidney(L)	(%)	10	0.288	0.021	10	0.306	0.018	10	0.255	0.013	10	0.300	0.022
Kidneys	(%)	10	0.590	0.036	10	0.629	0.028	10	0.525	0.030	10	0.621	0.041
Adrenal(R)	(%)	10	0.007	0.001	10	0.015	0.002	10	0.006	0.000	10	0.013	0.002
Adrenal(L)	(%)	10	0.008	0.001	10	0.017	0.002	10	0.007	0.001	10	0.014	0.001
Adrenals	(%)	10	0.015	0.003	10	0.032	0.003	10	0.012	0.001	10	0.027	0.003
Seminal vesicle	(%)	10	0.247	0.045	-	-	-	10	0.240	0.056	-	-	-
Uterus	(%)	-	-	-	10	0.215	0.057	-	-	-	10	0.265	0.119
Testis(R)	(%)	10	0.437	0.027	-	-	-	10	0.394	0.039	-	-	-
Testis(L)	(%)	10	0.442	0.027	-	-	-	10	0.399	0.039	-	-	-
Ovary(R)	(%)	-	-	-	10	0.027	0.006	-	-	-	10	0.025	0.004
Ovary(L)	(%)	-	-	-	10	0.026	0.005	-	-	-	10	0.024	0.005
Urinary bladder	(%)	10	0.027	0.005	10	0.028	0.004	10	0.023	0.005	10	0.023	0.004

Table 6-3. Absolute and relative organ weight

*Data collection period : 17-Sep-99 to 16-Jun-00

*Method : B.W. and organ weight measurement were performed after 24-hour fasting period.

	Unit	52 weeks						104 weeks					
		Male			Female			Male			Female		
		n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
Body weight	(g)	10	504.70	28.72	10	250.1	31.60	10	574.80	61.87		340.7	31.12
Absolute organ weight													
Brain	(mg)	10	2148	158	10	1884	155	10	2098	166	10	1999	154
Pituitary gland	(mg)	10	10.2	0.9	10	15.4	1.7	10	24.1	37.3	10	25.0	22.2
Heart	(mg)	10	1106.0	95.7	10	654.7	52.5	10	1356.0	88.8	10	860.0	95.7
Lung	(mg)	10	1229.5	129.7	10	825.5	74.9	10	1432.2	128.5	10	970.5	42.5
Stomach	(mg)	10	2081.1	242.4	10	1335.8	133.9	10	2492.4	232.3	10	1658.9	209.1
Liver	(mg)	10	11131	927	10	5559	741	10	14708	2221	10	7130	781
Spleen	(mg)	10	771.2	114.3	10	538.8	55.0	10	1198.5	296.9	10	637.8	108.5
Kidney(R)	(mg)	10	1245.7	117.8	10	737.9	71.8	10	1841.5	304.8	10	1000.2	73.5
Kidney(L)	(mg)	10	1206.9	130.1	10	713.8	88.3	10	1718.7	237.3	10	951.2	56.6
Kidneys	(mg)	10	2452.6	242.8	10	1451.7	155.2	10	3560.2	534.1	10	1951.4	121.7
Adrenal(R)	(mg)	10	24.0	4.0	10	26.0	5.0	10	33.6	4.3	10	40.0	31.2
Adrenal(L)	(mg)	10	26.0	3.7	10	29.5	7.9	10	35.3	6.6	10	33.0	6.1
Adrenals	(mg)	10	50.0	7.6	10	55.5	12.7	10	68.9	9.8	10	72.9	33.2
Seminal vesicle	(mg)	10	1359.9	315.5	-	-	-	10	1617.5	884.2	-	-	-
Uterus	(mg)	-	-	-	10	720.1	220.5	-	-	-	10	628.4	365.8
Testis(R)	(mg)	10	1789.5	124.0	-	-	-	10	1896.7	169.0	-	-	-
Testis(L)	(mg)	10	1794.8	98.8	-	-	-	10	1854.5	229.1	-	-	-
Ovary(R)	(mg)	-	-	-	10	50.6	15.2	-	-	-	10	61.6	53.4
Ovary(L)	(mg)	-	-	-	10	49.8	16.9	-	-	-	10	55.3	15.7
Urinary bladder	(mg)	10	128.7	30.3	10	61.3	9.7	10	140.7	25.4	10	94.7	19.7
Relative organ weight													
Brain	(%)	10	0.426	0.034	10	0.763	0.106	10	0.368	0.042	10	0.591	0.069
Pituitary gland	(%)	10	0.002	0.000	10	0.006	0.001	10	0.004	0.007	10	0.008	0.008
Heart	(%)	10	0.219	0.012	10	0.263	0.018	10	0.238	0.022	10	0.255	0.038
Lung	(%)	10	0.244	0.027	10	0.332	0.022	10	0.250	0.023	10	0.287	0.028
Stomach	(%)	10	0.413	0.048	10	0.537	0.050	10	0.438	0.059	10	0.490	0.075
Liver	(%)	10	2.209	0.185	10	2.232	0.221	10	2.558	0.281	10	2.106	0.293
Spleen	(%)	10	0.153	0.021	10	0.217	0.020	10	0.209	0.050	10	0.188	0.032
Kidney(R)	(%)	10	0.247	0.024	10	0.296	0.018	10	0.321	0.051	10	0.296	0.034
Kidney(L)	(%)	10	0.240	0.025	10	0.286	0.017	10	0.300	0.039	10	0.282	0.035
Kidneys	(%)	10	0.487	0.048	10	0.582	0.030	10	0.622	0.088	10	0.577	0.068
Adrenal(R)	(%)	10	0.005	0.001	10	0.010	0.002	10	0.006	0.001	10	0.012	0.011
Adrenal(L)	(%)	10	0.005	0.001	10	0.012	0.003	10	0.006	0.001	10	0.010	0.002
Adrenals	(%)	10	0.054	0.002	10	0.022	0.005	10	0.012	0.002	10	0.022	0.011
Seminal vesicle	(%)	10	0.293	0.066	-	-	-	10	0.286	0.172	-	-	-
Uterus	(%)	-	-	-	10	0.297	0.112	-	-	-	10	0.192	0.130
Testis(R)	(%)	10	0.356	0.032	-	-	-	10	0.333	0.042	-	-	-
Testis(L)	(%)	10	0.357	0.032	-	-	-	10	0.326	0.054	-	-	-
Ovary(R)	(%)	-	-	-	10	0.020	0.006	-	-	-	10	0.018	0.014
Ovary(L)	(%)	-	-	-	10	0.020	0.005	-	-	-	10	0.016	0.004
Urinary bladder	(%)	10	0.026	0.006	10	0.025	0.003	10	0.025	0.006	10	0.028	0.007

Table 7-1. Histopathological findings

*Data collection period : 18-Jan-00 to Oct-01

*Method : Hematoxylin eosin staining after fixation with 10% phosphate buffered formalin solution.

*Examination : Toshimi Usui D.V.M., Ph.D., Central Institute for Experimental Animals (CIEA)

Organ	Findings	5 weeks (n=10)		10 weeks (n=10)		18 weeks (n=10)	
		Male	Female	Male	Female	Male	Female
Heart	No abnormal changes	10	10	10	10	10	10
Lung	No abnormal changes	10	10	10	10	10	10
Liver	No abnormal changes	10	10	10	10	10	10
Kidney	Pelvic dilation	1	0	1	0	0	0
	Pelvic mineralization	0	0	0	1	0	0
	Corticomedullary mineralization	0	0	2	9	0	6
	Interstitial cell infiltration	0	0	0	0	1	0
	No abnormal changes	9	10	7	0	9	4
Spleen	No abnormal changes	10	10	10	10	10	10
Testes	Tubular atrophy	-	-	-	-	1	-
	No abnormal changes	-	-	-	-	9	-
Postate	Lymphoid cell foci	-	-	-	-	6	-
	No abnormal changes	-	-	-	-	4	-
Ovary	No abnormal changes	-	-	-	-	-	10
Uterus	No abnormal changes	-	-	-	-	-	10
Vagina	No abnormal changes	-	-	-	-	-	10
Urinary bladder	No abnormal changes	-	-	-	-	10	10

Table 7-2. Histopathological findings

*Data collection period : 18-Jan-00 to Oct-01

*Method : Hematoxylin eosin staining after fixation with 10% phosphate buffered formalin solution.

*Investigation : Toshimi Usui D.V.M., Ph.D., Central Institute for Experimental Animals

Organ Findings	104 weeks (n=10)	
	Male	Female
Heart		
Minute myocardial necrosis (left ventricle)	1	-
Small focus of cellular infiltration (subepicardial)	1	-
Interstitial fibrosis (minimal)	1	-
Myocardial necrosis/monocytic infiltration (slight)	1	-
No abnormal changes	7	10
Lung		
Subpleural macrophage aggregate, cholesterol crystal	-	1
No abnormal changes	10	9
Liver		
Focal hepatocellular fatty vacuolation	1	-
Focal perivascular monocytic infiltration	1	-
Occasional foci of hepatocellular fatty vacuolation		
Bile duct proliferation (slight)	-	2
No abnormal changes	9	8
Kidney		
Pelvic dilation	-	-
Pelvic mineralization	-	-
Corticomedullary mineralization	-	-
Interstitial cell infiltration	-	-
Chronic nephropathy (moderate)	2	-
Chronic nephropathy (slight)	3	-
Chronic nephropathy (minimal)	5	-
No abnormal changes	-	10
Spleen		
No abnormal changes	10	10
Testes		
Tubular atrophy	-	-
No abnormal changes	-	-
Prostate		
Lymphoid cell foci	-	-
No abnormal changes	-	-
Ovary		
No abnormal changes	-	-
Uterus		
No abnormal changes	-	-
Vagina		
No abnormal changes	-	-
Urinary bladder		
No abnormal changes	-	-
Subcutaneous mass		
Malignant trichoepithelioma	1	-
Adrenal		
Cortical adenoma	-	1

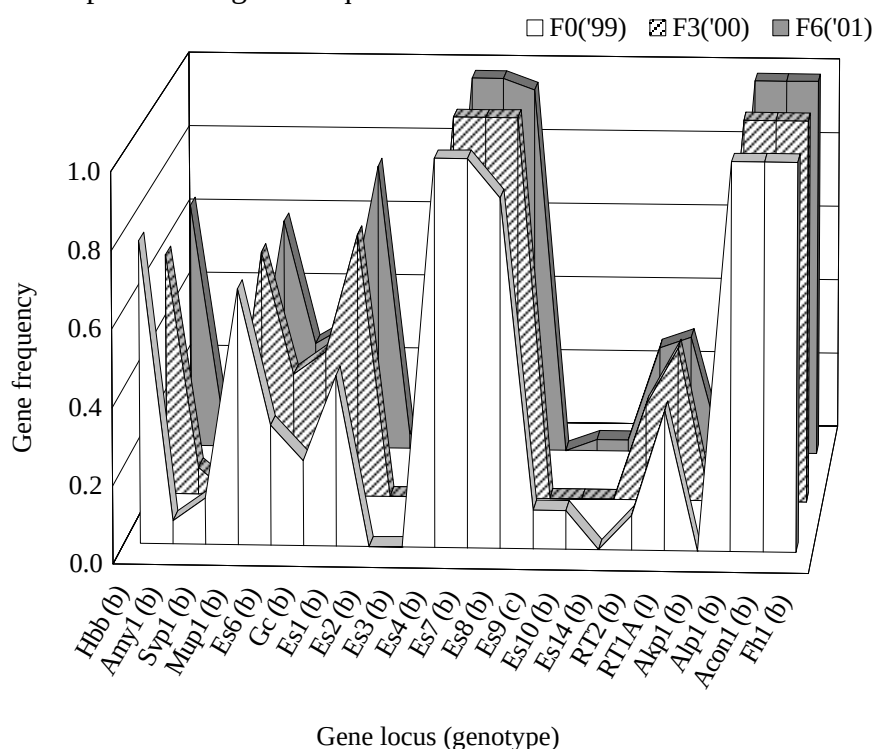
Table 8. Comparison of gene frequencies

*Examination Central Institute for Experimental Animals (CIEA), ICLAS monitoring center

Gene locus	No. of Chr.	F0		F2		F6	
		Date '99. 3. 3		Date '00. 2.18		Date '01. 3.27	
		n :Female6, Male=26		n :Female=36, Male=36		n :Female=36, Male=36	
<i>Hbb</i>	1	a: 0.22 b: 0.78		a: 0.38 b: 0.63		a: 0.35 b: 0.65	
<i>Amy1</i>	2	a: 0.94 b: 0.06		a: 0.93 b: 0.07		a: 0.92 b: 0.08	
<i>Syp1</i> ^{‡1}	3	a: 0.88 b: 0.12		a: ND ^{‡1} b: ND ^{‡1}		a: 0.89 b: 0.11	
<i>Mup1</i>	5	a: 0.34 b: 0.66		a: 0.36 b: 0.64		a: 0.39 b: 0.61	
<i>Es6</i> ^{‡1}	8	a: 0.69 b: 0.31		a: 0.68 b: 0.32		a: 0.72 b: 0.28	
<i>Gc</i>	14	a: 0.78 b: 0.22		a: 0.62 b: 0.38		a: 0.67 b: 0.33	
<i>Es1</i>	19	a: 0.56 b: 0.44		a: 0.31 b: 0.69		a: 0.24 b: 0.76	
<i>Es2</i>	19	a: 0.89 d: 0.11		a: 0.96 d: 0.04		a: 0.96 d: 0.04	
<i>Es3</i>	19	a: 0.92 d: 0.08		a: 0.97 d: 0.03		a: 0.97 d: 0.03	
<i>Es4</i>	19	a: 0.00 b: 1.00		a: 0.00 b: 1.00		a: 0.00 b: 1.00	
<i>Es7</i> ^{‡1}	19	a: 0.00 b: 1.00		a: 0.00 b: 1.00		a: 0.00 b: 1.00	
<i>Es8</i> ^{‡1}	19	a: 0.10 b: 0.90		a: 0.00 b: 1.00		a: 0.03 b: 0.97	
<i>Es9</i> ^{‡1}	19	a: 0.90 b: 0.00 c: 0.10		a: 1.00 b: 0.00 c: 0.00		a: 0.97 b: 0.03 c: 0.00	
<i>Es10</i> ^{‡1}	19	a: 0.90 b: 0.10		a: 1.00 b: 0.00		a: 0.97 b: 0.03	
<i>Es14</i> ^{‡2}	19	a: 1.00 b: 0.00		a: 1.00 b: 0.00		a: 0.97 b: 0.03	
<i>RT2</i>	19	a: 0.91 b: 0.09		a: 0.75 b: 0.25		a: 0.72 b: 0.28	
<i>RT1A</i>	20	a: 0.16 l: 0.36 u: 0.48		a: 0.22 l: 0.40 u: 0.38		a: 0.27 l: 0.31 u: 0.42	
<i>Akp1</i>	-	a: 1.00 b: 0.00		a: 1.00 b: 0.00		a: 1.00 b: 0.00	
<i>Alp1</i>	-	a: 0.00 b: 1.00		a: 0.00 b: 1.00		a: 0.00 b: 1.00	
<i>Acon1</i>	5	a: 0.00 b: 1.00		a: 0.00 b: 1.00		a: 0.00 b: 1.00	
<i>Fh1</i>	13	a: 0.00 b: 1.00		a: 0.00 b: 1.00		a: 0.00 b: 1.00	

^{‡1} Males only^{‡1} No samples^{‡2} Femals only

Distribution patterns of gene frequencies





TWO-YEAR STUDY DATA

Baseline Reproductive Data
for Wistar Hannover GALAS rats, collected by RCC, Switzerland

Includes:

Body Weight and Malformation Rates

Reproduction Data

Spontaneous Abnormal Findings

Skeletal examination of fetuses

Female Body Weight and Pup Malformation Rates

Female Body Weights

Number of dams	130
Number of fetuses	1634
Mean body weight on day 0 P.C.* (g)	220
Mean body weight on day 20 P.C. (g)	331
Mean body weight gain days 0-20 P.C. (g)	111
Mean body weight gain days 0-20 P.C. (%)	50.6
Mean food consumption days 0-20 P.C. (g/day)	23.3

Malformation/Anomalies

External examination

N (fetuses basis)	2
% per fetus	0.1
N (litter basis)	2
% per litter	1.5

Visceral examination

N (fetuses basis)	1
% per fetus	0.1
N (litter basis)	1
% per litter	0.8

Skeletal examination

N (fetuses basis)	24
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% per fetus	2.8
N (litter basis)	19
% per litter	14.6

*P.C.= Post coitum

Reproductive Data

Number of females mated	135
Pregnant	130
Used for calculation	130
Corpora lutes	1815
Mean	14.0
Pre-implantation loss	102
% of corp. lutea	5.6
Mean	0.8
Number of dams affected	58
Implantation site	1713
% of corp. lutea	94.4
Mean	13.2
Post-implantation loss	79
% of corp. lutea	4.6
Mean	0.6
Number of dams affected	52
Implantation site scars	0
Embryonic deaths : total	79
Embryonic resorptions	70
% of impl. Site	4.1
Mean	0.6
Number of dams affected	49
Fetal resorptions	9
% of impl. Site	0.5
Mean	0.1
Number of dams affected	16
Fetuses	
Total fetuses	1634
% of impl. Site	95.4
Mean	12.6
Live fetuses	1634
Dead fetuses	0

Malformed fetuses	2
% of fetuses	0.1
Mean	0.02
Number of dams affected	2

Malformed live fetuses at external examination	2
--	---

Malformed dead fetuses at external examination	0
--	---

Sex of fetuses

Total males	804
% of fetuses	49.2
Mean	6.2

Total females	830
% of fetuses	50.8
Mean	6.4

Weight of live fetuses

(Litter basis)

Males and females

N (litters)	130
Mean	4.7

Males

N (litters)	130
Mean	4.8

Females

N (litters)	130
Mean	4.6

(Individual basis)

Males and females

N (fetuses)	1360
Mean	4.7

Males

N (fetuses)	664
Mean	4.8

Females

N (fetuses)	696
Mean	4.6

Spontaneous abnormal findings

Number of litters/fetuses	130	1634
Number of fetuses for visceral/skeletal examination	787	847

Abnormal findings

Number affected

	Fetuses	Litters
	#	#
	%	%
Abnormally shaped sternebra Nos. 3 and 4	4	4
	0.5	3.1
Abnormally shaped sternebra Nos. 4 and 5	5	5
	0.6	3.9
Abnormally shaped sternebra Nos. 3-5	1	1
	0.1	0.8
Agnathia (lower jaw)	1	1
	0.1	0.8
Cleft palate	1	1
	0.1	0.8
Wavy ribs Nos. 8-12 (right side)	2	2
	0.2	1.6
Wavy ribs Nos. 9-12 (right side)	4	4
	0.5	3.1
Wavy ribs Nos. 10-12 (right side)	2	2
	0.2	1.6
Cleft palate, forelimbs deformed	1	1
	0.1	0.8
Upper and lower jaw shortened deformed and distal fused; forelimbs; radius, ulna, humerus and scapula bilateral deformed and shortened; Abnormally shaped sternebra Nos. 3-5; wavy and shortened ribs Nos. 1-13 (left and right side)	1	1
	0.1	0.8
Dumbbell shaped thoracic vertebral body No. 10	1	1
	0.1	0.8
Wavy ribs Nos. 9-12 (right side) and Nos. 9-13 (left side)	1	1
	0.1	0.8
Wavy ribs Nos. 11-12 (right side) and Nos. 10-12 (left side)	1	1
	0.1	0.8
Wavy ribs Nos. 8-12 (right side) and Nos. 10-12 (left side)	1	1
	0.1	0.8

Wavy ribs Nos. 10-12 (right side) and Nos. 11-12 (left side), dumbbell shaped thoracic vertebral body No. 12

1 1
0.1 0.8

Skeletal examination of fetuses (stage of development)

Number of litters/fetuses for skeletal examination	847		130	
Findings	Fetuses affected		Litters affected	
	#	(%)	#	(%)
<u>CRANIUM</u>				
INCOMPLETELY OSSIFIED				
-os occipitale	24	2.8	16	12.3
-os parietale, bilateral	32	3.7	16	12.4
-os interparietale	123	14.5	57	44.0
<u>CERVICAL VERTEBRAE</u>				
NON-OSSIFIED				
-cervical vertebra 1	107	12.4	57	43.8
-cervical vertebra 2	57	6.8	36	27.8
-cervical vertebra 3	14	1.6	10	7.6
-cervical vertebra 4	4	0.5	2	1.6
-cervical vertebra 5	2	0.2	2	1.6
-cervical vertebra 6	0	0.0	0	0.0
-cervical vertebra 7	0	0.0	0	0.0
DUMBBELL SHAPE				
-cervical vertebrae 1	176	20.7	82	63.4
BIPARTITE				
-cervical vertebra 1	11	1.3	8	6.4
<u>STERNUM</u>				
INCOMPLETELY OSSIFIED				
-sternebra 1	2	0.2	2	1.5
-sternebra 2	113	13.4	72	49.0
-sternebra 3	0	0.0	0	0.0
-sternebra 4	28	3.3	22	17.0
-sternebra 5	516	60.8	127	97.2
-sternebra 6	11	1.4	11	8.4
NON-OSSIFIED				
-sternebra 1	0	0.0	0	0.0
-sternebra 2	0	0.0	0	0.0
-sternebra 3	0	0.0	0	0.0
-sternebra 4	0	0.0	0	0.0
-sternebra 5	3	0.4	3	2.3
-sternebra 6	0	0.0	1	0.8
ABNORMALLY OSSIFIED				
-sternebra 3	0	0.0	0	0.0
-sternebra 4	8	1.1	8	6.2

-sternebra 5	12	1.4	11	8.5
<u>RIB(S) LEFT</u>				
SUPERNUMERARY RIB(S),				
-one	39	4.9	29	22.3
RUDIMENTARY SUPERNUMERARY RIB(S),				
-one	14	1.7	13	10.2
<u>RIB(S) RIGHT</u>				
SUPERNUMERARY RIB(S),				
-one	35	4.1	28	21.5
RUDIMENTARY SUPERNUMERARY RIB(S),				
-one	9	1.1	8	6.3
<u>LEFT FORELIMB</u>				
NON-OSSIFIED				
-digit 1 distal phalanx	48	5.7	27	20.9
-metacarpalia 2	0	0.0	0	0.0
-digit 2 proximal phalanx	264	31.1	95	73.2
-digit 2 distal phalanx	89	10.8	51	39.4
-metacarpalia 3	0	0.1	1	0.8
-digit 3 proximal phalanx	27	3.1	18	13.8
-digit 3 distal phalanx	3	0.4	4	3.0
-metacarpalia 4	0	0.0	1	0.8
-digit 4 proximal phalanx	45	5.3	30	23.1
-digit 4 distal phalanx	20	2.4	16	12.4
-metacarpalia 5	2	0.2	2	1.5
-digit 5 proximal phalanx	465	55.2	117	90.1
-digit 5 distal phalanx	385	45.4	110	84.8
<u>RIGHT FORELIMB</u>				
NON-OSSIFIED				
-digit 1 distal phalanx	47	5.6	27	20.9
-metacarpalia 2	0	0.0	0	0.0
-digit 2 proximal phalanx	258	30.4	97	74.7
-digit 2 distal phalanx	87	9.1	50	38.6
-metacarpalia 3	0	0.0	0	0.0
-digit 3 proximal phalanx	20	4.9	15	11.5
-digit 3 distal phalanx	3	0.4	3	2.3
-metacarpalia 4	0	0.0	0	0.0
-digit 4 proximal phalanx	39	4.0	26	20.0
-digit 4 distal phalanx	17	2.0	13	10.0
-metacarpalia 5	1	0.1	1	0.8
-digit 5 proximal phalanx	447	52.7	119	91.6
-digit 5 distal phalanx	381	45.0	107	82.5

LEFT HIND LIMB

NON-OSSIFIED

-talus	465	55.1	113	87.1
-metatarsalia 1	80	9.5	45	34.6
-toe 1 distal phalanx	3	0.4	3	2.3
-metatarsalia 2	0	0.0	0	15.9
-toe 2 proximal phalanx	537	62.3	122	78.0
-toe 2 medial phalanx	0	0.0	1	0.8
-toe 2 distal phalanx	2	0.2	1	0.8
-metatarsalia 3	0	0.0	0	0.0
-toe 3 proximal phalanx	281	33.2	94	63.6
-toe 3 medial phalanx	1	0.1	0	0.0
-toe 1 distal phalanx	1	0.1	2	1.5
-metatarsalia 4	0	0.0	0	0.0
-toe 4 proximal phalanx	264	31.2	89	59.7
-toe 4 medial phalanx	1	0.1	1	0.8
-toe 4 distal phalanx	1	0.1	1	0.8
-metatarsalia 5	0	0.0	0	0.0
-toe 5 proximal phalanx	723	85.4	129	99.2
-toe 5 medial phalanx	0	0.0	0	0.0
-toe 5 distal phalanx	4	0.5	4	3.1

RIGHT HIND LIMB

NON-OSSIFIED

-talus	482	57.1	112	86.3
-metatarsalia 1	82	10.1	46	35.3
-toe 1 distal phalanx	3	0.4	3	3.8
-metatarsalia 2	0	0.0	0	0.0
-toe 2 proximal phalanx	570	67.2	124	95.4
-toe 2 medial phalanx	0	0.0	0	0.0
-toe 2 distal phalanx	2	0.2	2	1.5
-metatarsalia 3	0	0.0	0	0.0
-toe 3 proximal phalanx	314	37.1	99	76.2
-toe 3 medial phalanx	0	0.0	0	0.0
-toe 3 distal phalanx	2	0.2	2	1.5
-metatarsalia 4	0	0.0	0	0.0
-toe 4 proximal phalanx	285	33.7	95	73.0
-toe 4 medial phalanx	0	0.0	0	0.0
-toe 4 distal phalanx	2	0.2	2	1.5
-metatarsalia 5	0	0.0	0	0.0
-toe 5 proximal phalanx	717	84.7	130	100.0
-toe 5 medial phalanx	0	0.0	0	0.0
-toe 5 distal phalanx	4	0.5	4	3.1

Wistar Hannover Rat – Most Common Neoplastic Findings by Organ or Tissue in Male and Female Control Animal Sacrificed after 103 Weeks, collected by RCC, Switzerland.

<u>ORGAN/finding</u>	<u>Male N</u>	<u>% of total</u>	<u>Female N</u>	<u>% of Total</u>
BRAIN	2280		2256	
Granular cell tumor		2.28		1.06
Astrocytoma		0.48		0.22
Oligodendroglioma		0.13		0.13
Mixed glioma		0.13		0.18
SPINAL CORD	1429		1425	
Neurinoma (b and m)		0.14		0
Tumor (NOS)		0.07		0
HARDERIAN GLS.	1705		1539	
Cystadenoma		0.23		0
Squamous cell carcinoma		0.12		0
ZYMBAL GLANDS	108		116	
Carcinoma		0.93		0
Adenoma		0		0.86
EYES	1815		1838	
Neurinoma (b and m)		0		0.11
EARS	1		10	
Sebaceous papilloma		0		10
Sebaceous carcinoma		100		40
Neural crest tumor		0		20
HEART	1872		1861	
Endocardial sarcoma		1.39		1.02
Paraganglioma		0.05		0
Hemangiosarcoma		0.05		0
LUNGS	2222		2095	
Adenoma		0.41		0.14
Carcinoma		0.23		0.05
Squamous cell carcinoma		0.05		0.05
PITUITARY	2312		2323	
Adenoma, pars distalis		41.05		65.78
Adenoma, pars intermedia		0.04		0.04
Adenocarcinoma		0		0.09
Pituicytoma		0		0.09
ADRENALS	1559		1554	
Pheochromocytoma (b)		3.91		1.42
Cortical adenoma		2.57		2.51
Pheochromocytoma (m)		1.41		0.32
ADRENAL CORTEX	1120		1118	
Adenoma		1.34		1.79
Carcinoma		0.18		0.09
Hemangioma		0		0.09
ADRENAL MEDULLA	1326		1278	
Pheochromocytoma (b)		3.17		1.25
Pheochromocytoma (m)		0.83		0.31
THYROID GLANDS	2425		2428	
C-cell adenoma		10.06		10.67
Follicular adenoma		3.09		1.85
C-cell carcinoma		1.4		1.32
Follicular carcinoma		0.82		0.29
PARATHYROID GLS.	2045		1870	
Adenoma		1.56		0.48

PANCREAS, EXO.	2107		2047	
Adenoma		1.42		0.05
Carcinoma		0.43		0
Mixed-cell adenoma		0.05		0
PANCREAS, ENDO.	2215		2183	
Islet cell adenoma		5.33		1.88
Islet cell carcinoma		1.94		0.6
LIVER	2340		2310	
Adenoma		2.01		3.2
Carcinoma		0.3		0.56
Hepatocellular nodule		0.21		0.35
Hemangioma		0.17		0
STOMACH	2164		1934	
Squamous cell carcinoma		0.18		0.1
Papilloma		0.14		0
Fibrosarcoma		0.05		0.05
Leiomyosarcoma		0		0.05
SMALL INTESTINE	1375		1403	
Neurinoma (m)		0.07		0
DUODENUM	547		704	
Leiomyoma		0.18		0.28
Adenocarcinoma		0.18		0
Histiocytic sarcoma		0		0.14
JEJUNUM	571		568	
Adenomatous polyp		0.18		0
Leiomyoma		0.18		0.18
Adenocarcinoma		0.18		0
Leiomyosarcoma		0.18		0
ILEUM	271		225	
Neurinoma		0.37		0
LARGE INTESTINE	1382		1413	
Leiomyoma		0.14		0.07
Lipoma		0.14		0
Fibroma		0.07		0.07
Mesothelioma		0.07		0
Fibrosarcoma		0		0.07
RECTUM	435		387	
Hemangioma		0		0.26
SUBMANDIBULAR GL	1685		1611	
Adenocarcinoma		0.12		0.12
Neurinoma (m)		0.12		0
Adenoma		0.06		0.06
PAROTID GLANDS	2		3	
Schwannoma (m)		50		0
Adenocarcinoma		0		100
SALIVARY GL(NOS)	47		50	
Myoepithelioma		6.38		0
Sarcoma (NOS)		4.26		0
KIDNEYS	2440		2164	
Tubular adenoma		0.33		0.18
Lipoma		0.25		0.23
Liposarcoma		0.25		0.09
Transitional carcinoma		0.2		0

URINARY BLADDER	1709		1754	
Polyp		0.12		0
Transitional cell papilloma		0.06		0.06
SKIN	2233		2191	
Fibroma		4.16		1.1
Keratoacanthoma		3.63		0
Papilloma		1.25		0.18
Lipoma		0.99		0.59
Squamous cell carcinoma		0.9		0.32
Neurinoma (m)		0.76		0.18
TESTES	2439			
Leydig cell tumor (b)		4.31		
Mesothelioma		0.16		
Hemangioma		0.08		
EPIDIDYMIDES	1788			
Adenocarcinoma		0.06		
Mesothelioma		0.06		
PROSTATE GLAND	1896			
Adenoma		0.21		
Adenocarcinoma		0.11		
SEMINAL VESICLES	1951			
Adenocarcinoma		0.1		
Adenoma		0.05		
MAMMARY GLANDS	1128		2322	
Fibroadenoma		1.24		30.23
Adenocarcinoma		0.44		4.65
Adenoma		0.18		1.55
Carcinoma, NOS		0.09		0.43
Carcinomasarcoma		0		0.3
OVARIES			2437	
Theca-granulosa cell tumor (b)				1.76
Granulosa cell tumor (b)				0.62
Sertoli cell tumor				0.33
Theca-granulosa cell tumor (m)				0.33
Theca cell tumor (b)				0.12
UTERUS			2224	
Polyp, stromal				4.27
Adenocarcinoma				3.37
Polyp, endometrial				2.74
Stromal sarcoma				0.58
Adenoma				0.49
VAGINA			564	
Polyp stromal				0.89
Squamous cell carcinoma				0.18
Fibroma				0.18
Leiomyoma				0.18
Neurofibroma (b)				0.18
HEMOLYMPHORETICULAR	2162		2182	
Lymphoma		3.75		4.03
Histiocytoma		1.16		0.69
Fibrous histiocytoma		0.28		0.14
Myeloid leukemia		0		0.23

BONE MARROW	1350		1347	
Hemangioma		0.07		0
Plasma cell myeloma		0.07		0
SPLEEN	2299		2096	
Hemangiosarcoma		0.39		0.19
Hemangioma		0.26		0.29
Sarcoma, NOS		0.04		0
Histiocytoma		0		0.05
MESENTERIC L.N.	2311		2281	
Hemangioma		8.74		2.85
Hemangiosarcoma		1.25		0.53
Lymphangioma		0.04		0.04
MANDIBULAR L.N.	1874		1740	
Hemangioma		0.05		0.06
OTHER L.N.	222		208	
Hemangiosarcoma		1.35		0.48
Hemangioma		0.45		1.92
THYMUS	1853		2018	
Thymoma (m)		0.92		0.35
Thymoma (b)		0.16		0.69
Adenocarcinoma		0		0.1
ORAL CAV/SOFT PAL.	46		49	
Squamous cell carcinoma		4.35		0
Papilloma		2.17		0
NASAL CAVITY	203		256	
Neurinoma (m)		0.49		0
Carcinoma, NOS		0		0.39
BONES-OTHER	1287		1242	
Osteosarcoma		0.23		0
Osteoma		0.16		0.16
BONE-STERNUM	220		220	
Carcinoasarcoma			0.45	0
BONE-FEMUR	200		90	
Osteofibroma		0.5		0
Osteosarcoma		0.5		0
SKELETAL MUSCLE	1586		1534	
Hemangiosarcoma		0.13		0
Neurinoma (m)		0.06		0
TONGUE	1036		964	
Granular cell tumor		0.19		0
Papilloma		0.1		0.41
BODY CAVITIES	225		229	
Lipoma		8.44		11.35
Mesothelioma		2.67		1.75
Hemangiosarcoma		0.89		0
Fibroma		0.44		2.18
ADIPOSE TISSUE	5		5	
Lipoma		20		60
Hibernoma		20		0
JOINT	400		350	
Fibrosarcoma		0.25		0

Wistar Hannover Rat – Most Commonly Observed Non-neoplastic Findings by Organ or Tissue in Male and Female Control Animals Sacrificed after 103 Weeks collected by RCC, Switzerland.

<u>ORGAN/finding</u>	<u>Male N</u>	<u>% of Total</u>	<u>Female N</u>	<u>% of Total</u>
BRAIN	2138		2130	
Compression		17.91		31.55
Ventricular dilation		8.33		13.42
Radiculoneuropathy		1.59		2.07
Mineralization		1.12		0.09
Gliosis		0.65		1.27
Hemorrhage		0.56		0.89
Necrosis		0.47		0.8
SPINAL CORD	2051		2002	
Radiculoneuropathy		17.23		14.64
Vacuolation		2.15		2.15
Gliosis		0.85		0.6
Inflammation		0.73		0.7
Necrosis		0.68		0.8
Dural Ossification		0.68		0.45
SCIATIC NERVE	1918		1898	
Degeneration		44.06		42.31
Lymphoid Cell Foci		0.21		0.11
Mineralization		0.16		0.05
OPTIC NERVES	1083		1026	
Mineralization		1.29		0.58
Degeneration		1.11		2.44
Inflammatory Foci		0.18		0.19
Inflammation		0.09		0.10
EYES	2218		2244	
Hemorrhage		6.13		5.97
Retinal Degeneration		5.09		6.68
Lenticular Degeneration		3.97		3.79
Keratitis		3.16		1.78
Iritis		2.39		1.16
Panophthalmitis		1.98		1.52
Retrob. Inflammation		0.72		1.07
HARDERIAN GLAND	2087		2093	
Inflammation		29.61		28.48
Pigment Deposition		19.12		16.77
Lymphoid Cell Foci		12.7		13.14
Dilated Cystic Glands		3.69		3.63
Hyperplasia		1.77		0.57
Granulomas		1.58		1.82
Atrophy		1.39		1.39
LACRIMAL GLANDS	209		59	
Inflammation		68.9		1.69
Chromodacryorrhoe		31.58		1.69
Vacuolation		20.57		5.08
Glandular ectasia		20.1		5.08
Ductal ectasia		12.92		1.69
Acinar atrophy		12.44		3.39
Lymphoid cell foci		10.05		6.78
EX. LACRIMAL GL.	977		510	
Inflammation		46.16		15.1

Harderian alteration		42.89		16.08
Page 2				
Lymphoid cell foci		28.05		8.63
Atrophy		12.9		1.57
Cytoplasmic vacuolation		9.42		2.35
Glandular ectasia		9.42		1.57
Zymbal's glands	68		70	
Cystic change		36.76		42.86
Inflammation		4.41		2.86
AORTA	1916		1679	
Mineralization		4.07		0.36
Inflammation		0.47		0.06
HEART	2211		2180	
Myofibrosis/necrosis		52.83		30.87
Lymphoid cell foci		16.1		8.53
Cardiomyopathy		15.15		8.3
Myocarditis		6.29		4.59
Myocardial mineralization		3.26		0.41
Congestion		1.31		0.41
TRACHEA	1619		1554	
Distended glands		8.4		8.5
Lymphoid cell foci		4.88		4.99
Inflammation		2.1		3.45
Pigment deposition		0.99		1.98
Inflammatory cell infiltrate		0.93		1.09
LUNGS	2223		2176	
Alveolar histiocytosis		25.55		26.84
Arterial mineralization		13.32		9.38
Congestion		12.24		6.16
Lymphoid hyperplasia		6.84		7.03
Perivascular cuffing		5.98		5.61
Mineralization		5.62		3.95
Inflammation		4.86		6.76
Fibrosis		4.72		4.83
PITUITARY	2289		2292	
Cyst(s)/clefts		16.38		7.9
Hyperplasia		10.97		10.82
Cystic degeneration		2.05		1.18
Altered cell focus		1.57		1.48
Angiectasis		1.44		4.28
Pigment deposition		1.05		1.0
Hemorrhage		0.35		1.09
ADRENALS	618		619	
Altered cell foci		49.35		35.86
Pigment deposition		41.26		42.0
Cortical vacuolation		20.39		8.4
Cortical hypertrophy		13.27		8.89
Cortical hyperplasia		10.36		7.59
Cortical hemorrh. deg.		6.63		19.71
Congestion		4.37		5.98
Cystic cortical deg.		3.72		25.2
Angiectasis		0.81		15.51
ADRENAL CORTEX	1753		1740	
Cellular alteration		38.9		26.44
Fatty infiltration		17.74		7.41

Accessory cortical tissue	15.4		12.53
Page 3			
Pigment deposition	15.35		20.57
Clear cell foci	14.66		13.85
Cortical hyperplasia	12.21		9.6
Angiectasis	6.27		26.72
Hypertrophic foci	5.36		6.72
Cystic degeneration	3.88		43.51
ADRENAL MEDULLA 1827		1810	
Medullary hyperplasia	7.99		3.59
Lymphoid cell foci	3.78		3.15
Pigment deposition	2.35		5.08
Angiectasis	1.48		2.15
Inflammation	0.33		0.55
THYROID GLANDS 2290		2290	
C-cell hyperplasia	30.61		31.14
Follicular cyst(s)	7.47		3.89
Follicular hyperplasia	5.15		2.71
Ultimobranchial cyst(s)	4.93		2.62
Mineralization	1.97		0.31
Lymphoid cell foci	0.87		0.92
PARATHYROID GL. 1972		1885	
Hyperplasia	12.68		3.87
Fibrosis	0.96		2.86
Anomaly	0.05		0.11
Cyst(s)	0.05		0.11
PANCREAS 2276		2282	
Pigment deposition	18.89		3.24
Islet hyperplasia	14.15		9.03
Acinar atrophy	9.05		5.83
Inflammation	5.62		5.26
Lymphoid cell foci	3.73		4.43
LIVER 2312		2299	
Fatty change	36.07		15.48
Clear cell foci	34.47		11.48
Basophilic foci	33.48		52.72
Bile duct hyperplasia	27.25		35.1
Inflammation	27.12		21.4
Inflammatory cell foci	26.43		25.88
Peribiliary fibrosis	18.99		20.92
Eosinophilic foci	13.75		10.92
Erythropoiesis	9.04		11.7
COMMON BILE D. 17		17	
Dilated lumen	88.24		82.35
Inflammation	11.76		5.88
ESOPHAGUS 1330		1321	
Hyperkeratosis	1.73		0.76
Inflammation	0.3		0
Dilated lumen	0.15		0.15
STOMACH 2276		2280	
Dilated glands	26.01		30.88
Erosion/ulceration	7.82		4.04
Inflammation	7.07		4.87
Mineralization	5.05		0.39
Hyperplasia	4.35		2.68

SMALL INTESTINE	699		714	
Mineralization		0.86		0
Glandular ectasia		0.57		0.28
Inflammation		0.43		0.14
Diverticulum		0.29		0
Digested blood		0.14		0.42
DUODENUM	1336		1306	
Inflammation		1.12		2.22
Mucosal atrophy		0.3		0.08
Mucosal hyperplasia		0		0.23
Ulceration		0		0.15
JEJUNUM	1158		1214	
Inflammation		1.81		2.06
Congestion		0.95		0.58
Periarteritis/arteritis		0.43		0
Diverticulum		0.26		0
Lymphoid hyperplasia		0.09		0.25
ILEUM	1085		1044	
Inflammation		0.92		0
Mucosal atrophy		0.37		0.1
Lymphoid hyperplasia		0.37		0.38
Congestion		0.09		0.48
LARGE INTESTINE	711		728	
Nematodes		9.14		7.01
Mineralization		0.84		0
Inflammation		0.7		0.14
Dilated lumen		0.7		0.55
Lymphoid hyperplasia		0.28		0.41
CECUM	1368		1307	
Inflammation		2.19		0.77
Ulcer(s)		0.73		0
Nematodes		0.73		0.08
Edema		0.73		0.38
Congestion		0.29		0.46
Lymphoid hyperplasia		0.07		0.69
COLON	1500		1502	
Nematodes		3.2		2.26
Inflammation		2.27		1.0
Lymphoid hyperplasia		1.0		0.2
Mineralization		0.8		0
RECTUM	1092		1065	
Nematodes		4.21		3.47
Inflammation		1.01		0.94
Mineralization		0.27		0
SALIVARY GLANDS	805		807	
Inflammation		2.86		3.35
Lymphoid cell foci		2.48		2.35
Alveolar atrophy		0.75		0
Ductal ectasia		0.5		1.24
SUBLINGUAL GL.	1150		1214	
Lymphoid cell foci		2.35		1.73
Inflammation		1.57		1.24
Atrophy		1.22		0.99
Ectopic parotid gland		0.52		0.58

SUBMANDIBULAR GL. 1223		1212	
Atrophy	1.47		2.39
Lymphoid cell foci	1.23		1.73
Interstitial fibrosis	1.06		1.32
Inflammation	0.98		0.41
URINARY BLADDER 2138		2129	
Lymphoid cell foci	6.83		4.79
Inflammation	3.98		0.85
Urothelial hyperplasia	1.54		0.61
Luminal distention	1.31		0.33
KIDNEYS 2210		2183	
Chronic prog. Nephropathy	56.52		21.3
Lymphoid cell foci	51.72		50.62
Tubular pigmentation	22.31		38.62
Tubular dilation	19.82		19.7
Tubular casts	18.51		20.98
Tubular basophilia	14.3		17.91
Tubular atrophy	13.62		16.08
Pelvic mineralization	12.04		26.52
Glomerulosclerosis	9.32		4.35
Cort. Med. Mineralization	8.96		42.56
Pelvic calculi	8.19		22.63
Pyelitis	6.7		4.76
Cortical mineralization	5.34		23.18
Urothelial hyperplasia	5.16		11.04
Medullary Mineralization	3.98		7.15
SKIN 2075		2084	
Atrophy of adnexum	5.93		5.85
Pododermatitis	3.13		0.05
Inflammation	2.94		2.26
Epidermoid cyst	1.93		0.29
Abscess	0.92		0.05
Hyperkeratosis	0.72		2.4
Follicular keratosis	0.72		0.58
Acanthosis	0.48		0.82
TESTES 2228			
Tubular atrophy	24.33		
Periarteritis/arteritis	12.39		
Mineralization	6.01		
Leydig cell hyperplasia	4.13		
Sperm stasis	1.26		
EPIDIDYMIDES 2080			
Aspermia	10.82		
Oligospermia	7.74		
Lymphoid cell foci	5.05		
Segmental change	4.71		
Vacuolization	2.55		
Atrophy	1.06		
PROSTATE 2218			
Inflammation	29.44		
Concretions	8.52		
Alveolar atrophy	7.8		
Lymphoid cell foci	5.37		
Hyperplasia	4.69		

SEMINAL VESICLES 1995

Atrophy	13.13
Inflammation	7.62
Dilated acini	6.52
Reduced secretions	2.91
Reduced size	2.51

MAMMARY GLANDS 1110

Concretion	11.08	2081	12.59
Cystic change	4.05		28.35
Secretion	3.24		10.91
Acinar hyperplasia	2.61		20.04
Galactocele	0.36		8.46
Alveolar/ductal degeneration	0		4.76

OVARIES

Cyst(s)		2134	10.97
Pigment deposition			6.79
Atrophy			5.01
Interstitial cell hyperplasia			4.92
Sertoli cell hyperplasia			3.56

UTERUS

		2193	
Stromal proliferation			11.81
Distended lumen			8.76
Glandular hyperplasia			8.66
Squamous hyperplasia			5.7
Pigment deposition			5.65
Endometrial fibrosis			4.15
Congestion			3.19

CERVIX

		269	
Collagenosis/fibrosis			3.35
Squamous cell hyperplasia			0.37

VAGINA

		636	
Mucification			3.14
Abscess(es)			1.42
Dilated lumen			1.26
Inflammation			1.1

BONE MARROW 1677

		1670	
Hemopoietic activity	5.31		5.57
Increased granulopoiesis	5.13		5.39
Atrophy	1.31		0.66
Decreased erythropoiesis	1.01		1.62
Necrosis	0.89		1.2
Myelofibrosis	0.78		0.66
Increased erythropoiesis	0.66		1.44

MESENTERIC L. N. 2074

		2058	
Pigment deposition	22.28		24.83
Histiocytosis	11.96		15.21
Sinosoidal cysts	7.96		5.54
Congestion	7.33		4.23
Lymphoid hyperplasia	6.94		5.73
Erythrophagocytosis	3.33		2.92

MANDIBULAR L. N.	1845		1867	
Sinoidal cysts		16.42		12.64
Lymphoid hyperplasia		10.46		8.52
Hyperemia		8.67		6.00
Plasmacytosis		7.05		7.45
Hemosiderin		6.45		12.0
Histiocytosis		1.84		2.46
OTHER L. N.	435		393	
Sinus dilation		26.67		8.65
Lymphoid hyperplasia		20.92		21.88
Congestion		20.69		12.47
Pigment deposition		13.79		20.36
Histiocytosis		8.05		8.91
Erythrophagocytosis		8.05		3.82
THYMUS	1940		2067	
Involution		14.79		11.03
Medullary cysts		12.01		33.91
Congestion		4.85		3.0
Hemorrhage		1.91		0.97
Epithelial hyperplasia		1.44		5.32
SPLEEN	2211		2194	
Increased hemosiderin		24.51		28.30
Increased erythropoiesis		17.96		22.93
Increased hemopoiesis		17.82		18.14
Congestion		8.14		8.02
Increased granulopoiesis		3.62		5.65
Lymphoid hyperplasia		2.17		2.23
TONGUE	1185		1179	
Inflammation		2.95		4.33
Lymphoid cell foci		1.94		2.37
Periarteritis/arteritis		1.94		1.7
Hyperkeratosis		0.93		1.53
Myofiber atrophy		0.17		1.7
NASAL TURBINATES	199		207	
Inflammation		7.54		5.31
Dilated glands		7.54		3.86
Lymphoid hyperplasia		1.01		0
JOINTS	330		300	
Arthropathy		14.85		15.0
Arthritis		0.61		1.0
BONE	1416		1357	
Cartilage degeneration		14.76		15.18
Aseptic necrosis		3.18		4.35
Fibro-osseous lesion		1.41		1.62
SKELETAL MUSCLE	2029		2020	
Atrophy		27.85		12.87
Inflammation		4.48		1.53
Lymphoid cell foci		1.18		2.13
BODY CAVITIES	197		212	
Fat necrosis		28.43		34.91
Inflammation		2.54		2.83
Periarteritis/arteritis		2.03		0
ADIPOSE TISSUE	21		15	
Nodular fat necrosis		52.38		46.67