

4 **Table S1. Individual mortality.**

Gender	Group/dosage (mCi/kg)	Animal no.	Observation period (day)														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Male	V.C./0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T1/2.0	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T2/6.0	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T3/18.0	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Female	V.C./0	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T1/2.0	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T2/6.0	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T3/18.0	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-, no dead animals.

5
6

7 **Table S2. General symptoms by individual (male on the day of administration).**

Gender	Group/dosage (mCi/kg)	Animal no.	Day of administration (day 1), time after administration (hours)						
			0	1	2	3	4	5	6
Male	V.C./0	1	-	-	-	-	-	-	-
		2	-	-	-	-	-	-	-
		3	-	-	-	-	-	-	-
		4	-	-	-	-	-	-	-
		5	-	-	-	-	-	-	-
	T1/2.0	6	-	-	-	-	-	-	-
		7	-	-	-	-	-	-	-
		8	-	-	-	-	-	-	-
		9	-	-	-	-	-	-	-
		10	-	-	-	-	-	-	-
	T2/6.0	11	-	-	-	-	-	-	-
		12	-	-	-	-	-	-	-
		13	-	-	-	-	-	-	-
		14	-	-	-	-	-	-	-
		15	-	-	-	-	-	-	-
	T3/18.0	16	-	-	-	-	-	-	-
		17	-	-	-	-	-	-	-
		18	-	-	-	-	-	-	-
		19	-	-	-	-	-	-	-
		20	-	-	-	-	-	-	-

8 -, asymptomatic.

9

10

11 **Table S3. General symptoms by individual (during observation period, male)**

Gender	Group/dosage (mCi/kg)	Animal no.	Observation period after administration (day)													
			2	3	4	5	6	7	8	9	10	11	12	13	14	15
Male	V.C./0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T1/2.0	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T2/6.0	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		13	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	T3/18.0	16	-	-	-	-	-	-	-	-	-	-	-	-	-	#
		17	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		18	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		19	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		20	-	-	-	-	-	-	-	-	-	-	-	-	-	-

12 -, asymptomatic.

13 #, crust, right back, mild, 1, less than 1 cm in diameter.

14

15 **Table S4. General symptoms by individual (female on the day of administration)**

Gender	Group/dosage (mCi/kg)	Animal no.	Day of administration (day 1), time after administration (hours)						
			0	1	2	3	4	5	6
Female	V.C./0	21	-	-	-	-	-	-	-
		22	-	-	-	-	-	-	-
		23	-	-	-	-	-	-	-
		24	-	-	-	-	-	-	-
		25	-	-	-	-	-	-	-
	T1/2.0	26	-	-	-	-	-	-	-
		27	-	-	-	-	-	-	-
		28	-	-	-	-	-	-	-
		29	-	-	-	-	-	-	-
		30	-	-	-	-	-	-	-
	T2/6.0	31	-	-	-	-	-	-	-
		32	-	-	-	-	-	-	-
		33	-	-	-	-	-	-	-
		34	-	-	-	-	-	-	-
		35	-	-	-	-	-	-	-
	T3/18.0	36	-	-	-	-	-	-	-
		37	-	-	-	-	-	-	-
		38	-	-	-	-	-	-	-
		39	-	-	-	-	-	-	-
		40	-	-	-	-	-	-	-

-, asymptomatic.

16
17

18 **Table S5. General symptoms by individual (during observation period, female)**

Gender	Group/dosage (mCi/kg)	Animal no.	Observation period after administration (day)														
			2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Female	V.C./0	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	T1/2.0	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	T2/6.0	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	T3/18.0	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		38	-	-	-	-	-	-	-	-	-	#	#	#	*	*	*
		39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

19 -, asymptomatic.
 20 #, hair loss, left back, mild.
 21 *, fissure, left back, mild, 1 piece, less than 1.5 cm in diameter.
 22
 23
 24
 25
 26

27 **Table S6. Individual weight (male)**

Gender	Group/dosage (mCi/kg)	Animal no.	Observation period (day)						
			1	3	5	8	12	15	
Male	V.C./0	1	221.98	238.52	260.59	285.93	325.12	347.00	
		2	212.57	229.04	249.33	279.53	319.43	347.85	
		3	209.66	227.04	248.50	278.19	311.99	340.97	
		4	205.52	223.61	249.66	279.88	328.27	365.69	
		5	204.20	224.37	244.47	275.91	323.85	363.68	
		Average (g)	210.79	228.52	250.51	279.89	321.73	353.04	
		Standard deviation (g)	7.09	6.00	6.01	3.72	6.30	10.98	
		The number of animal	5	5	5	5	5	5	
		T1/2.0	6	226.75	238.61	259.68	291.00	340.84	378.83
			7	210.65	223.36	239.99	269.05	306.94	337.91
	8		211.01	224.14	243.31	273.36	308.77	335.17	
	9		205.19	222.58	248.60	284.49	323.27	363.68	
	10		202.93	217.32	238.66	267.24	307.47	334.15	
	Average (g)		211.31	225.20	246.05	277.03	317.46	349.95	
	Standard deviation (g)		9.31	7.96	8.53	10.29	14.72	20.22	
	The number of animal		5	5	5	5	5	5	
	T2/6.0		11	219.95	236.68	253.11	282.94	314.74	346.48
			12	215.86	231.10	250.12	275.65	317.32	343.48
		13	210.49	223.92	244.92	274.51	317.20	349.18	
		14	209.37	221.37	242.92	271.01	309.22	334.56	
15		198.86	210.36	229.98	256.22	286.46	310.66		
Average (g)		210.91	224.69	244.21	272.07	308.99	336.87		
Standard deviation (g)		7.97	10.02	8.93	9.87	13.01	15.65		
The number of animal		5	5	5	5	5	5		
T3/18.0		16	215.43	234.31	252.71	283.81	317.93	343.94	
		17	218.82	240.21	261.77	293.64	333.62	366.65	
	18	210.59	230.32	246.53	279.00	325.39	357.50		
	19	209.47	222.98	245.17	263.22	294.80	311.72		
	20	199.32	213.41	229.48	255.63	278.09	285.71		
	Average (g)	210.73	228.25	247.13	275.06	309.97	333.10		
	Standard deviation (g)	7.40	10.39	11.84	15.45	22.95	33.69		
	The number of animal	5	5	5	5	5	5		

There was no statistically significant difference in group comparison using SPSS.

28
29

30 **Table S7. Weight gain by individual (male)**

Gender	Group/dosage (mCi/kg)	Animal no.	Observation period (day)					
			3	5	8	12	15	
Male	V.C./0	1	16.54	38.61	63.95	103.14	125.02	
		2	16.47	36.76	66.96	106.86	135.28	
		3	17.38	38.84	68.53	102.33	131.31	
		4	18.09	44.14	74.36	122.75	160.17	
		5	20.17	40.27	71.71	119.65	159.48	
		Average (g)	17.73	39.72	69.10	110.95	142.25	
		Standard deviation (g)	1.52	2.77	4.06	9.58	16.46	
		The number of animal	5	5	5	5	5	
		T1/2.0	6	11.86	32.93	64.25	114.09	152.08
			7	12.71	29.34	58.40	96.29	127.26
	8		13.13	32.30	62.35	97.76	124.16	
	9		17.39	43.41	79.30	118.08	158.49	
	10		14.39	35.73	64.31	104.54	131.22	
	Average (g)		13.90	34.74	65.72	106.15	138.64	
	Standard deviation (g)		2.16	5.35	7.96	9.69	15.56	
	The number of animal		5	5	5	5	5	
	T2/6.0		11	16.73	33.16	62.99	94.79	126.53
			12	15.24	34.26	59.79	101.46	127.62
		13	13.43	34.43	64.02	106.71	138.69	
		14	12.00	33.55	61.64	99.85	125.19	
15		11.50	31.12	57.36	87.60	111.80		
Average (g)		13.78	33.30	61.16	98.08	125.97		
Standard deviation (g)		2.20	1.33	2.65	7.24	9.57		
The number of animal		5	5	5	5	5		
T3/18.0		16	18.88	37.28	68.38	102.50	128.51	
		17	21.39	42.95	74.82	114.80	147.83	
	18	19.73	35.94	68.41	114.80	146.91		
	19	13.51	35.70	53.75	85.33	102.25		
	20	14.09	30.16	56.31	78.77	86.39		
	Average (g)	17.52	36.41	64.33	99.24	122.38		
	Standard deviation (g)	3.52	4.56	8.94	16.64	27.33		
	The number of animal	5	5	5	5	5		

31

32 **Table S8. Individual weight (female)**

Gender	Group/dosage (mCi/kg)	Animal no.	Observation period (day)						
			1	3	5	8	12	15	
Female	V.C/0	21	176.07	184.23	193.67	212.57	233.17	249.09	
		22	162.80	177.18	184.61	205.97	227.29	243.71	
		23	161.71	173.47	178.28	197.85	216.20	231.98	
		24	167.40	171.16	185.88	198.39	217.00	237.66	
		25	162.76	164.13	184.06	196.90	210.04	214.58	
		Average (g)	166.15	174.03	185.30	202.34	220.74	235.40	
		Standard deviation (g)	5.97	7.43	5.52	6.77	9.31	13.29	
		The number of animal	5	5	5	5	5	5	
		T1/2.0	26	172.94	179.78	195.35	212.57	231.12	251.33
			27	171.86	178.65	194.24	211.83	229.35	247.11
	28		164.98	168.39	184.12	195.08	207.66	226.64	
	29		163.52	171.09	181.19	194.41	213.71	225.96	
	30		164.29	163.55	178.82	187.09	194.12	220.91	
	Average (g)		167.52	172.29	186.74	200.20	215.19	234.39	
	Standard deviation (g)		4.50	6.88	7.60	11.40	15.47	13.80	
	The number of animal		5	5	5	5	5	5	
	T2/6.0	31	174.45	179.91	190.55	203.18	221.89	240.32	
		32	171.50	180.46	190.38	201.24	220.71	239.05	
		33	166.04	168.31	180.16	189.69	203.82	220.96	
		34	166.61	167.73	184.00	197.36	219.28	237.59	
		35	159.63	168.40	178.98	192.04	206.80	221.95	
		Average (g)	167.65	172.96	184.81	196.70	214.50	231.97	
		Standard deviation (g)	5.68	6.60	5.48	5.79	8.51	9.66	
		The number of animal	5	5	5	5	5	5	
		T3/18.0	36	172.10	174.54	190.04	198.63	214.48	228.36
			37	172.30	178.18	191.52	205.97	223.56	233.08
	38		169.75	172.87	187.27	199.56	217.90	236.61	
39	166.22		168.09	179.78	192.45	205.18	214.12		
40	160.45		171.47	180.69	196.33	208.77	222.60		
Average (g)	168.16		173.03	185.86	198.59	213.98	226.95		
Standard deviation (g)	4.96		3.73	5.37	4.96	7.28	8.89		
The number of animal	5		5	5	5	5	5		

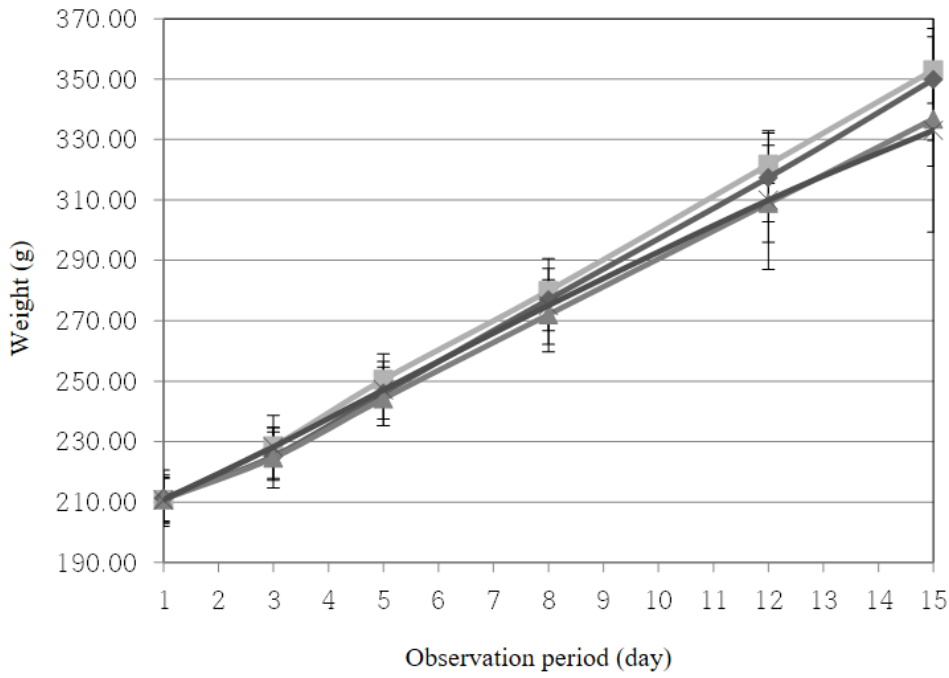
33 There was no statistically significant difference in group comparison using SPSS.

34 **Table S9. Weight gain by individual (female)**

Gender	Group/dosage (mCi/kg)	Animal no.	Observation period (day)				
			3	5	8	12	15
Female	V.C./0	21	8.16	17.60	36.50	57.10	73.02
		22	14.38	21.81	43.17	64.49	80.91
		23	11.76	16.57	36.14	54.49	70.27
		24	3.76	18.48	30.99	49.60	70.26
		25	1.37	21.30	34.14	47.28	51.82
		Average (g)	7.89	19.15	36.19	54.59	69.26
		Standard deviation (g)	5.40	2.30	4.47	6.76	10.68
	The number of animal	5	5	5	5	5	
	T1/2.0	26	6.84	22.41	39.63	58.18	78.39
		27	6.79	22.38	39.97	57.49	75.25
		28	3.41	19.14	30.10	42.68	61.66
		29	7.57	17.67	30.89	50.19	62.44
		30	-0.74	14.53	22.80	29.83	56.62
		Average (g)	4.77	19.23	32.68	47.67	66.87
		Standard deviation (g)	3.48	3.34	7.23	11.79	9.42
	The number of animal	5	5	5	5	5	
	T2/6.0	31	5.46	16.10	28.73	47.44	65.87
		32	8.96	18.88	29.74	49.21	67.55
		33	2.27	14.12	23.65	37.78	54.92
		34	1.12	17.39	30.75	52.67	70.98
		35	8.77	19.35	32.41	47.17	62.32
		Average (g)	5.32	17.17	29.06	46.85	64.33
		Standard deviation (g)	3.61	2.13	3.31	5.53	6.11
	The number of animal	5	5	5	5	5	
	T3/18.0	36	2.44	17.94	26.53	42.38	56.26
		37	5.88	19.22	33.67	51.26	60.78
		38	3.12	17.52	29.81	48.15	66.86
39		1.87	13.56	26.23	38.96	47.90	
40		11.02	20.24	35.88	48.32	62.15	
Average (g)		4.87	17.70	30.42	45.81	58.79	
Standard deviation (g)		3.77	2.55	4.28	5.00	7.17	
The number of animal	5	5	5	5	5		

35 **Fig. S2. Average weight change in males.**

36



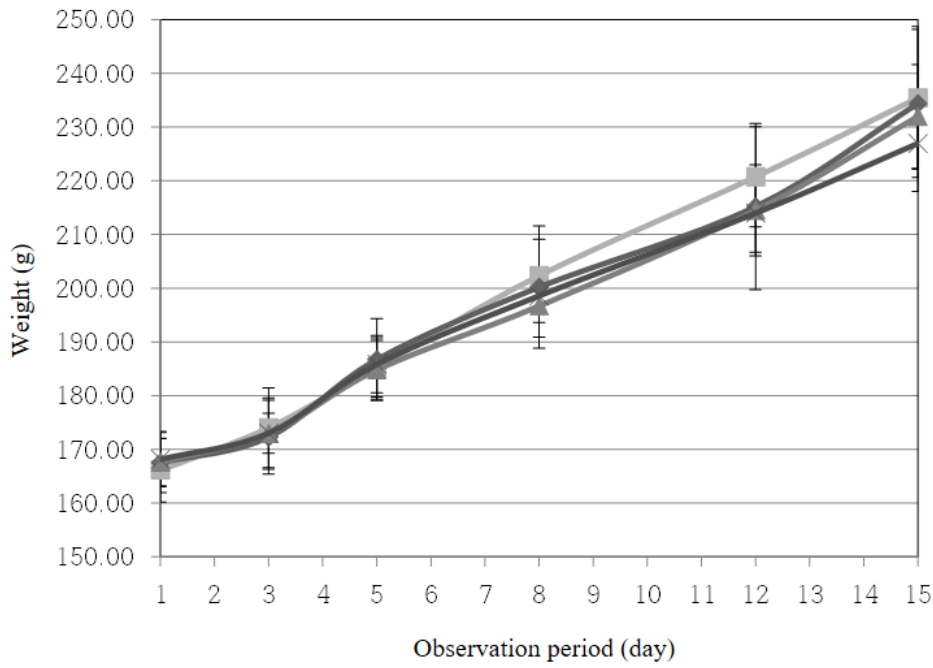
37 —■— V.C. —◆— T1 —▲— T2 —×— T3
 (0 mCi/kg) (2.0 mCi/kg) (6.0 mCi/kg) (18.0 mCi/kg)

37

38

39 **Fig. S3. Average weight change in females.**

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41 ■ V.C. ◆ T1 ▲ T2 × T3
 (0 mCi/kg) (2.0 mCi/kg) (6.0 mCi/kg) (18.0 mCi/kg)

41

42

43 **Table S10. Autopsy findings for each individual**

Group/dosage (mCi/kg)	Male		Female		
	Animal no.	Autopsy findings	Animal no.	Autopsy findings	
V.C./0	1	NGF	21	NGF	
	2	NGF	22	NGF	
	3	NGF	23	NGF	
	4	NGF	24	NGF	
	5	NGF	25	Gastric atrophy	
	The number of animals necropsied		5	The number of animals necropsied	5
	The number of abnormal findings		0	The number of abnormal findings	1
T1/2.0	6	NGF	26	NGF	
	7	NGF	27	NGF	
	8	NGF	28	NGF	
	9	NGF	29	NGF	
	10	NGF	30	NGF	
	The number of animals necropsied		5	The number of animals necropsied	5
	The number of abnormal findings		0	The number of abnormal findings	0
T2/6.0	11	NGF	31	NGF	
	12	NGF	32	NGF	
	13	NGF	33	Gastric atrophy	
	14	NGF	34	NGF	
	15	Gastric atrophy	35	NGF	
	The number of animals necropsied		5	The number of animals necropsied	5
	The number of abnormal findings		1	The number of abnormal findings	1
T3/18.0	16	Crust, mild, right back, less than 1 cm	36	NGF	
	17	NGF	37	NGF	
	18	NGF	38	Fissure, mild, left back, less than 1.5 cm	
	19	50% reduction in spleen size	39	NGF	
	20	50% reduction in spleen size	40	50% reduction in spleen size	
	The number of animals necropsied		5	The number of animals necropsied	5
	The number of abnormal findings		3	The number of abnormal findings	2

44 NGF, no abnormal findings.