

表1-9 雌ラットの臓器重量(ホコッシ抽出物の1年間反復投与毒性試験)

	Dose level(%)				
	0	0.04	0.2	1.0	1.5
No. of animals	12	12	12	12	24
B.W. (g)	368.8 ± 69.0	352.4 ± 35.6	319.3 ± 66.7	230.6 ± 15.4	232.3 ± 20.2
Brain (g)	1.84 ± 0.10	1.89 ± 0.10	1.89 ± 0.05	1.88 ± 0.10	1.83 ± 0.07
(g%)	0.52 ± 0.10	0.54 ± 0.06	0.61 ± 0.12**	0.82 ± 0.05**	0.79 ± 0.07**
Thymus (g)	0.37 ± 0.16	0.26 ± 0.05**	0.23 ± 0.07**	0.17 ± 0.04**	0.17 ± 0.04**
(g%)	0.10 ± 0.03	0.07 ± 0.01*	0.07 ± 0.01*	0.07 ± 0.02**	0.08 ± 0.02**
Heart (g)	0.90 ± 0.08	0.84 ± 0.08*	0.78 ± 0.07**	0.67 ± 0.07**	0.67 ± 0.07**
(g%)	0.25 ± 0.04	0.24 ± 0.03	0.25 ± 0.04	0.29 ± 0.03*	0.29 ± 0.03**
Lung (g)	1.04 ± 0.14	1.09 ± 0.10	1.08 ± 0.09	0.96 ± 0.06*	0.90 ± 0.06**
(g%)	0.29 ± 0.07	0.31 ± 0.04	0.35 ± 0.06	0.42 ± 0.03**	0.39 ± 0.04**
Liver (g)	7.30 ± 1.00	6.95 ± 0.79	6.49 ± 1.05*	5.26 ± 0.42**	5.53 ± 0.43**
(g%)	2.01 ± 0.29	1.98 ± 0.15	2.06 ± 0.24	2.29 ± 0.20**	2.39 ± 0.22**
Spleen (g)	0.57 ± 0.08	0.58 ± 0.09	0.53 ± 0.10	0.46 ± 0.06**	0.43 ± 0.06**
(g%)	0.16 ± 0.02	0.17 ± 0.03	0.17 ± 0.04	0.20 ± 0.02**	0.19 ± 0.03**
Kidney (g)	1.66 ± 0.13	1.66 ± 0.12	1.57 ± 0.18	1.33 ± 0.15**	1.30 ± 0.11**
(g%)	0.46 ± 0.07	0.47 ± 0.03	0.50 ± 0.07	0.58 ± 0.05**	0.56 ± 0.06**
Adrenal (mg)	68.7 ± 10.2	72.6 ± 12.1	66.3 ± 10.5	58.3 ± 8.4*	54.1 ± 8.1**
(mg%)	19.3 ± 5.0	20.8 ± 4.0	21.3 ± 4.6	25.3 ± 3.3**	23.6 ± 4.7*
Ovary (g)	0.16 ± 0.06	0.50 ± 1.23	0.13 ± 0.05	0.11 ± 0.02	0.13 ± 0.09
(g%)	0.04 ± 0.02	0.15 ± 0.37	0.04 ± 0.02	0.05 ± 0.01	0.06 ± 0.04
Uterus (g)	0.67 ± 0.29	0.79 ± 0.27	1.29 ± 1.22*	0.70 ± 0.19	0.74 ± 0.26
(g%)	0.19 ± 0.10	0.23 ± 0.09	0.44 ± 0.49*	0.31 ± 0.08	0.32 ± 0.11

<sup>a</sup>: Mean ± SD

\*,\*\* : Significantly different from the untreated control value at the levels of p<0.05, p<0.01, respectively.

図1-3 ラット体重の推移(ホコッシ抽出物の発がん性試験)

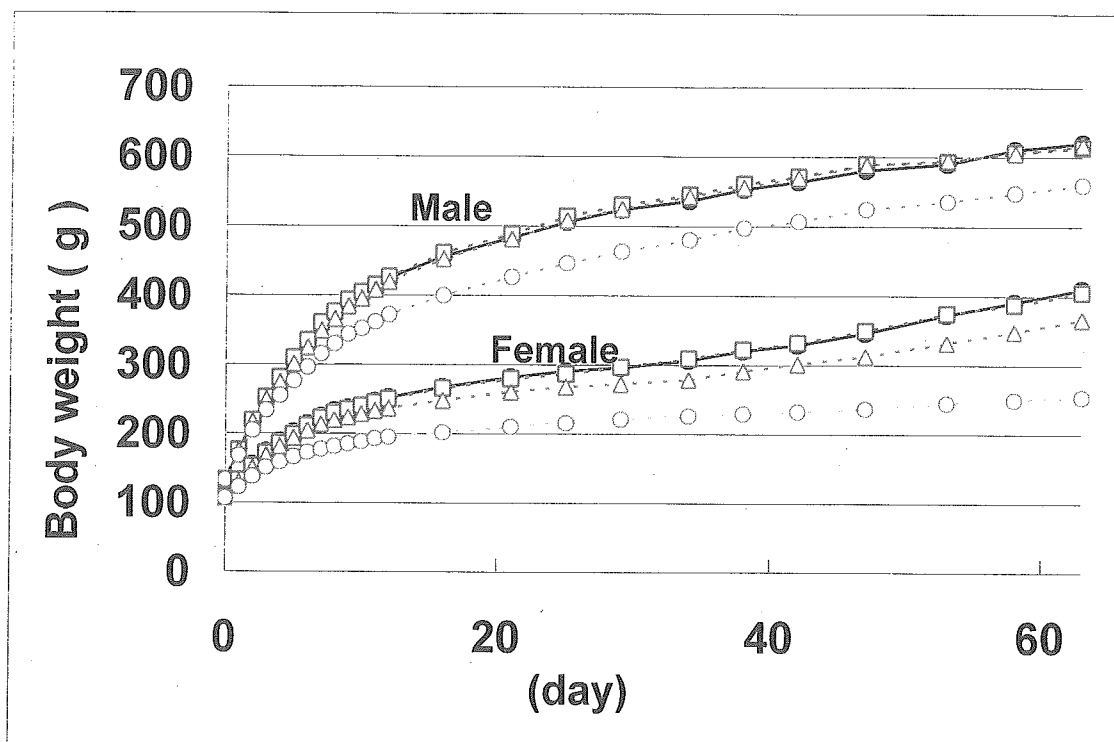


表1-10 ラット体重の推移(ホコッソ抽出物の発がん性試験)

Sex	Group	Weeks						
		0w	1w	2w	3w	4w	5w	
Male	0	133.5 ± 9.8 <sup>a</sup>	175.4 ± 11.4	217.0 ± 13.9	250.7 ± 15.6	278.3 ± 19.3	305.9 ± 21.2	
	0.04	133.6 ± 9.5	176.3 ± 11.5	219.1 ± 13.7	252.5 ± 15.5	281.1 ± 17.4	309.7 ± 19.8	
	0.2	132.9 ± 11.2	176.3 ± 13.1	217.1 ± 14.4	249.7 ± 16.3	274.7 ± 18.4	301.4 ± 20.7	
	1.0	133.1 ± 8.2	168.4 ± 11.5**	204.8 ± 13.6**	234.1 ± 16.5**	255.6 ± 18.4**	276.5 ± 21.6**	
		6w	7w	8w	9w	10w	11w	
	0	331.3 ± 22.8	355.7 ± 24.3	373.2 ± 26.5	389.4 ± 27.8	401.1 ± 29.2	414.2 ± 30.4	
	0.04	334.4 ± 22.3	360.3 ± 24.3	376.0 ± 26.5	393.1 ± 28.3	404.1 ± 30.5	414.8 ± 31.8	
	0.2	324.7 ± 21.8	349.4 ± 25.2	366.1 ± 27.0	384.2 ± 29.2	395.4 ± 31.3	408.2 ± 32.5	
	1.0	296.5 ± 24.5**	315.8 ± 27.1**	330.0 ± 29.2**	343.8 ± 31.5**	352.1 ± 32.4**	361.8 ± 33.8**	
		12w	16w	21w	25w	29w	34w	
	0	424.9 ± 31.7	456.2 ± 35.4	482.7 ± 40.9	505.7 ± 43.8	523.1 ± 46.8	536.3 ± 49.5	
	0.04	426.8 ± 33.3	461.1 ± 38.9	488.4 ± 44.7	514.1 ± 49.0	530.1 ± 54.1	545.0 ± 58.1	
	0.2	419.7 ± 34.0	452.9 ± 39.3	481.3 ± 45.9	508.6 ± 50.6	524.6 ± 52.9	542.9 ± 58.3	
	1.0	372.4 ± 35.5**	400.0 ± 39.8**	426.5 ± 46.0**	446.7 ± 49.8**	463.6 ± 53.1**	480.4 ± 58.1**	
		38w	42w	47w	53w	63W		
	0	552.5 ± 52.9	563.6 ± 55.1	580.3 ± 57.5	590.2 ± 61.0	620.1 ± 67.1		
	0.04	560.7 ± 61.6	571.5 ± 65.2	589.4 ± 68.7	593.3 ± 72.3	614.0 ± 75.9		
	0.2	555.5 ± 61.0	569.8 ± 63.5	588.5 ± 66.5	595.4 ± 70.0	617.2 ± 73.7		
	1.0	497.5 ± 62.9**	507.2 ± 64.1**	524.8 ± 67.2**	535.9 ± 70.7**	559.5 ± 75.6**		
	Female	0	108.1 ± 5.4	132.0 ± 6.8	154.5 ± 7.8	174.0 ± 9.6	188.6 ± 11.4	201.9 ± 12.7
		0.04	108.6 ± 5.9	132.4 ± 6.9	152.6 ± 8.4	172.0 ± 9.7	186.6 ± 10.7	199.3 ± 12.4
		0.2	107.1 ± 6.5	130.4 ± 8.3	150.6 ± 9.3*	168.8 ± 11.1**	182.2 ± 12.3**	194.3 ± 13.8**
		1.0	106.6 ± 5.8	122.7 ± 7.0**	138.0 ± 8.1**	151.5 ± 9.2**	159.2 ± 9.7**	166.7 ± 11.0**
			6w	7w	8w	9w	10w	11w
		0	213.8 ± 13.4	224.8 ± 15.6	232.9 ± 16.8	236.7 ± 17.7	240.8 ± 18.2	246.6 ± 19.1
		0.04	211.6 ± 14.1	222.9 ± 15.3	230.1 ± 16.6	235.1 ± 17.9	240.5 ± 18.7	245.5 ± 19.4
		0.2	204.9 ± 15.4**	213.9 ± 16.7**	220.2 ± 18.1**	223.8 ± 18.5**	228.6 ± 19.7**	233.3 ± 20.8**
		1.0	172.9 ± 11.5**	177.6 ± 11.8**	181.8 ± 12.6**	185.5 ± 12.2**	188.6 ± 12.5**	193.1 ± 12.6**
		12w	16w	21w	25w	29w	34w	
0		252.1 ± 20.0	267.4 ± 24.8	281.5 ± 29.6	291.0 ± 32.7	295.8 ± 35.6	306.3 ± 41.9	
0.04		250.3 ± 20.1	265.9 ± 23.7	279.6 ± 27.4	287.4 ± 33.7	296.9 ± 38.1	309.3 ± 43.6	
0.2		237.0 ± 21.3**	248.4 ± 22.2**	261.1 ± 24.1**	268.7 ± 27.7**	272.6 ± 29.1**	278.7 ± 31.8**	
1.0		195.5 ± 13.1**	202.2 ± 13.8**	210.5 ± 14.4**	216.0 ± 14.6**	221.2 ± 16.5**	226.6 ± 16.4**	
		38w	42w	47w	53w	63W		
0		320.2 ± 46.5	329.1 ± 49.1	345.9 ± 56.8	373.0 ± 67.6	409.8 ± 76.4		
0.04		322.4 ± 50.3	332.2 ± 52.2	349.7 ± 62.1	374.8 ± 71.9	405.2 ± 83.7		
0.2		291.3 ± 36.3**	301.9 ± 40.8**	313.1 ± 45.1**	332.1 ± 52.1**	366.3 ± 59.4**		
1.0		229.5 ± 17.2**	232.8 ± 19.1**	236.8 ± 20.9**	245.3 ± 24.0**	254.1 ± 27.2**		

<sup>a</sup> : Mean±SD

\*,\*\* : Significantly different from the untreated control value at the levels of  $p < 0.05$ ,  $p < 0.01$ , respectively.

表1-11 ラットの平均摂餌量(ホコッシ抽出物の発がん性試験)

Sex	Group	Weeks						
		1w	2w	3w	4w	5w	6w	7w
Male	0	14.94 ± 0.72 <sup>a</sup>	16.53 ± 0.68	16.50 ± 1.30	17.12 ± 0.94	18.61 ± 1.08	18.51 ± 0.75	19.92 ± 1.49
	0.04	14.31 ± 0.74	16.41 ± 0.96	16.65 ± 1.38	17.56 ± 0.83	18.69 ± 0.83	19.33 ± 0.90*	20.43 ± 1.27
	0.2	14.70 ± 0.94	16.10 ± 0.87	16.54 ± 1.36	16.59 ± 1.08	18.07 ± 1.02	18.12 ± 0.96	19.38 ± 1.37
	1.0	13.97 ± 1.79	16.02 ± 0.63	16.03 ± 0.82	16.54 ± 0.74	17.49 ± 0.72**	17.44 ± 0.74**	17.83 ± 0.64**
		8w	9w	10w	11w	12w	16w	21w
	0	18.81 ± 1.13	18.60 ± 0.85	18.79 ± 0.97	18.56 ± 0.97	18.33 ± 1.09	18.48 ± 0.84	17.32 ± 1.02
	0.04	19.44 ± 1.01	19.13 ± 0.86	19.06 ± 0.89	18.82 ± 0.90	18.86 ± 1.04	18.17 ± 0.79	17.22 ± 0.75
	0.2	18.83 ± 1.05	18.60 ± 1.16	18.92 ± 1.27	18.35 ± 1.24	18.29 ± 1.20	17.93 ± 0.70	17.27 ± 1.29
	1.0	17.08 ± 0.61**	17.07 ± 0.48**	16.69 ± 0.74**	16.78 ± 0.46**	17.20 ± 0.49*	16.68 ± 0.52**	16.17 ± 1.35*
		25w	29w	34w	38w	42w	47w	53w
	0	18.97 ± 0.76	13.41 ± 0.71	16.37 ± 0.86	17.39 ± 0.791	16.39 ± 0.299	17.19 ± 1.08	13.09 ± 1.05
	0.04	19.28 ± 1.24	13.12 ± 1.43	17.42 ± 0.80*	17.71 ± 2.526	17.37 ± 2.536	18.11 ± 1.40	13.40 ± 0.97
	0.2	19.18 ± 1.09	13.05 ± 1.22	17.33 ± 1.28	17.23 ± 1.552	16.46 ± 0.815	17.87 ± 1.17	12.80 ± 1.23
	1.0	18.09 ± 0.79*	12.42 ± 0.97	16.31 ± 1.51	16.89 ± 1.032	16.10 ± 0.867	16.70 ± 0.96	12.82 ± 1.15
		56w	63w					
	0	19.00 ± 1.06	17.99 ± 0.96					
0.04	18.63 ± 1.96	17.43 ± 1.80						
0.2	18.34 ± 1.89	18.28 ± 1.92						
1.0	18.02 ± 1.58	17.03 ± 0.72						
Female		1w	2w	3w	4w	5w	6w	7w
	0	11.20 ± 0.65	12.28 ± 0.39	13.01 ± 0.48	13.83 ± 0.52	14.00 ± 0.62	13.88 ± 0.54	13.63 ± 0.77
	0.04	10.74 ± 0.34	11.88 ± 0.42	12.86 ± 0.46	13.67 ± 0.52	13.69 ± 0.83	14.23 ± 0.67	14.41 ± 0.78*
	0.2	10.40 ± 0.39	11.62 ± 0.47	11.81 ± 0.37**	12.43 ± 0.49**	12.80 ± 0.50**	12.80 ± 0.44**	12.85 ± 0.51*
	1.0	11.70 ± 2.66	11.20 ± 1.19**	10.78 ± 1.45**	11.04 ± 0.76**	11.26 ± 1.50**	11.08 ± 1.02**	11.10 ± 1.28**
		8w	9w	10w	11w	12w	16w	21w
	0	13.24 ± 0.64	12.98 ± 0.56	13.09 ± 0.56	12.75 ± 0.67	13.10 ± 0.92	13.24 ± 0.62	12.73 ± 0.64
	0.04	13.83 ± 0.83	13.44 ± 0.75	13.61 ± 0.69	13.48 ± 0.79	13.31 ± 0.95	13.06 ± 0.88	12.75 ± 0.86
	0.2	12.55 ± 0.63*	12.46 ± 0.50	12.57 ± 0.67	12.24 ± 0.75	12.40 ± 0.83	12.46 ± 0.64*	12.20 ± 0.68
	1.0	11.62 ± 0.92**	11.29 ± 1.46**	11.94 ± 2.41	11.59 ± 1.92*	11.00 ± 1.20**	11.24 ± 1.09**	11.36 ± 1.08**
		25w	29w	34w	38w	42w	47w	53w
	0	12.74 ± 0.64	9.06 ± 0.67	12.30 ± 0.72	13.27 ± 0.83	13.12 ± 0.81	13.28 ± 0.86	11.03 ± 0.86
	0.04	12.74 ± 0.93	9.55 ± 1.15	13.04 ± 1.03*	13.07 ± 1.07	12.78 ± 0.91	13.95 ± 1.12	11.44 ± 1.01
	0.2	12.05 ± 0.60	8.64 ± 0.64	11.82 ± 0.66	12.49 ± 0.64	12.20 ± 0.82*	12.66 ± 0.80	10.11 ± 0.71**
	1.0	10.75 ± 0.80**	7.93 ± 1.56*	10.44 ± 0.72**	10.57 ± 0.90**	10.24 ± 0.83**	10.50 ± 0.78**	7.94 ± 0.60**
		56w	63w					
0	13.41 ± 0.86	14.52 ± 1.03						
0.04	13.90 ± 1.05	13.87 ± 0.86						
0.2	12.62 ± 0.87*	14.20 ± 1.94						
1.0	10.56 ± 0.84**	10.92 ± 0.88*						

<sup>a</sup>: Mean±SD

\*\*\*: Significantly different from the untreated control value at the levels of  $p < 0.05$ ,  $p < 0.01$ , respectively.

表1-12 ラットの平均被験物質摂取量(ホコッシ抽出物の発がん性試験)

Sex	Group	Body weight (g)	Mean food consumption	Mean daily intake of Hokosshi
Male	0	620.1 <sup>a</sup> ± 67.1	16.83 ± 1.96	0 ± 0
	0.04	614.0 ± 75.9	16.95 ± 2.18	14.58 ± 4.59
	0.2	617.2 ± 73.7	16.63 ± 2.39	72.31 ± 22.85
	1.0	559.5 ± 75.6**	15.87 ± 2.02*	386.72 ± 113.13
Female	0	409.8 ± 76.4	12.38 ± 1.45	0 ± 0
	0.04	405.2 ± 83.7	12.48 ± 1.61	17.60 ± 4.61
	0.2	366.3 ± 59.4**	11.65 ± 1.36	88.78 ± 20.21
	1.0	254.1 ± 27.2**	10.30 ± 1.56**	489.78 ± 117.96

<sup>a</sup>: Mean ± SD

\*,\*\* : Significantly different from the untreated control value at the levels of p<0.05, p<0.01, respectively.

図 2-1 ラットの生存曲線(ルチン酵素分解物の1年間反復投与毒性試験)

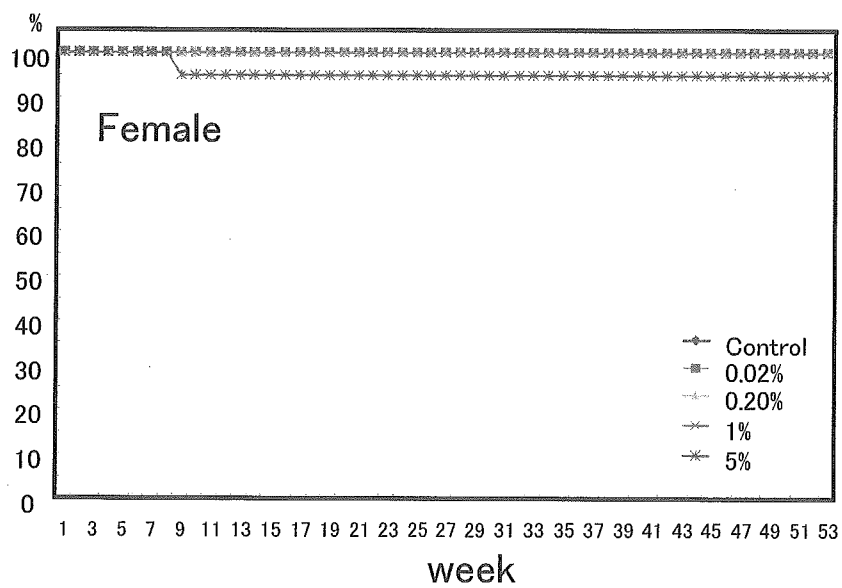
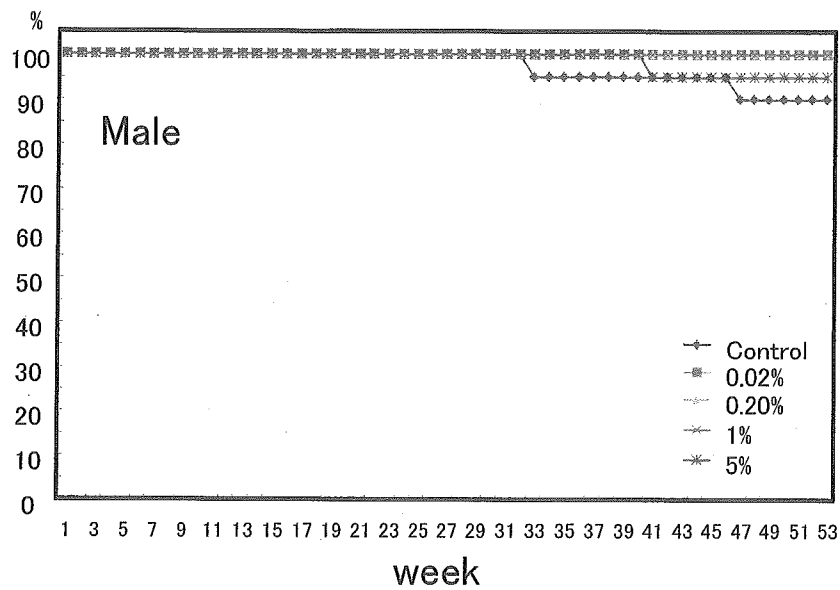


図 2-2 ラット体重の推移(ルチン酵素分解物の1年間反復投与毒性試験)

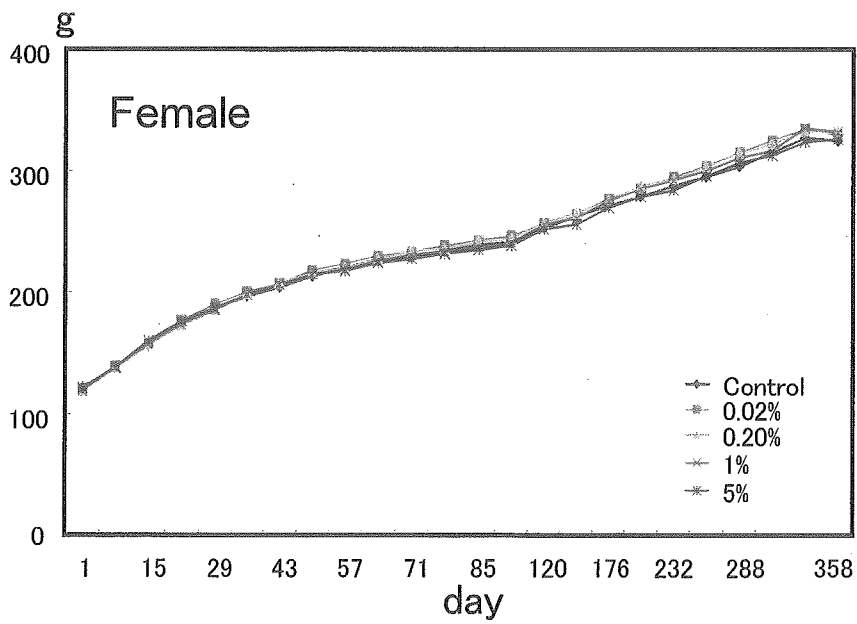
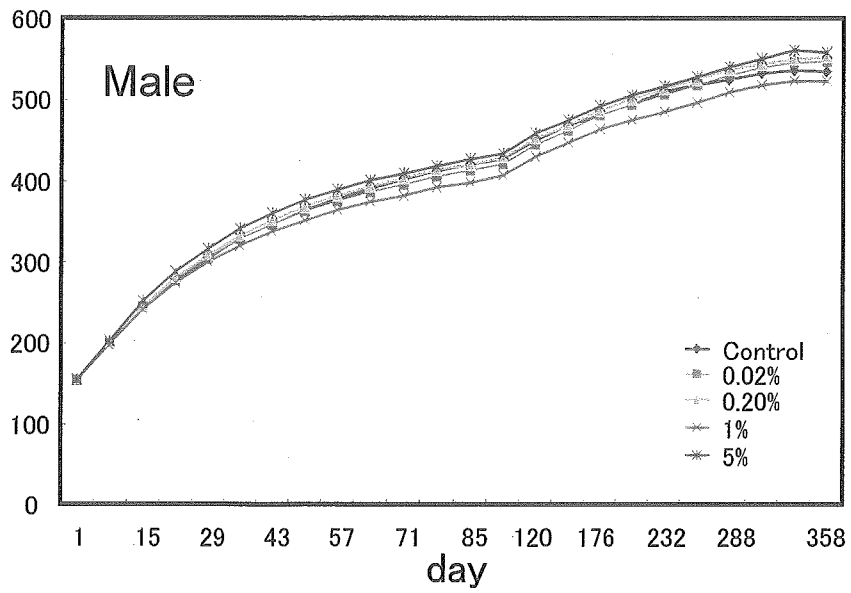


図 2-3 ラット平均摂餌量の推移(ルチン酵素分解物の1年間反復投与毒性試験)

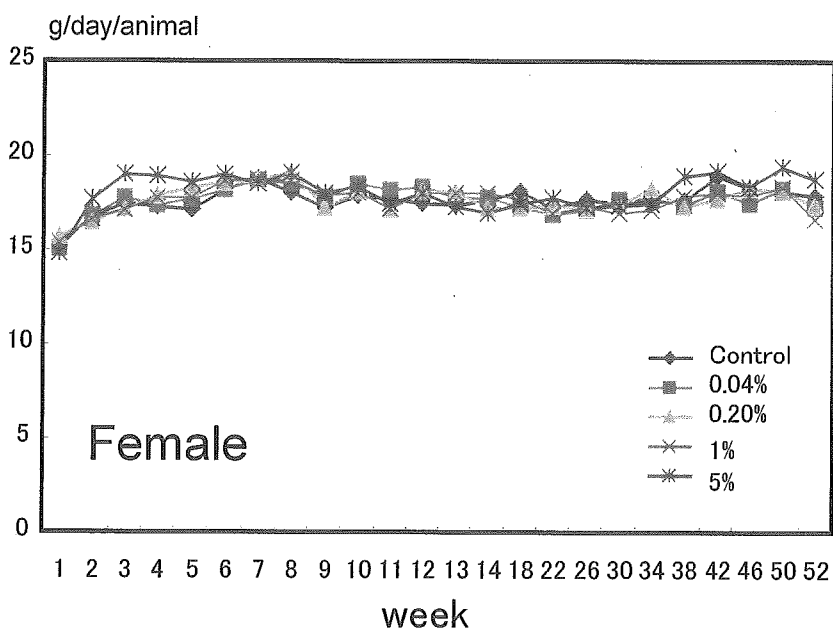
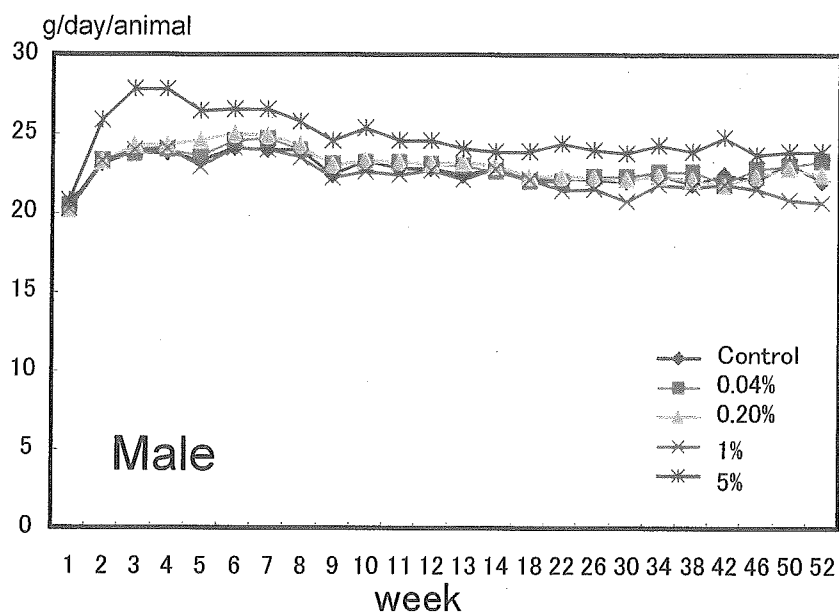




表 2-1-1 雄ラットの臨床所見(ルチン酵素分解物の1年間反復投与毒性試験)

Findings	Week																													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26				
<b>Control</b>																														
Alopecia of forearm				4	7	7	7																							
Subcutaneous nodule																														
Facial subcutaneous nodule																														
Staining of urogenital region																														
Deep respiration																														
Cloudy urine																														
Plantar erosion																														
Total number of objects observed	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	
Number of animals with findings	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Number of objects without findings	140	140	136	133	133	133	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	
<b>0.04%</b>																														
Swelling																														
Crust formation																														
Crust of dorsal neck						7	7	7	7																					
Alopecia of chest	2	7	1																											
Staining around eye																														
Plantar erosion																														
Total number of objects observed	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	
Number of animals with findings	0	1	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Number of objects without findings	140	139	133	132	133	133	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	
<b>0.20%</b>																														
Crust of dorsal neck	2	6																												
Crust of back	7	7	7	7	7	6																								
Auricular swelling																														
Plantar erosion																														
Total number of objects observed	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	
Number of animals with findings	0	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Number of objects without findings	140	131	127	133	133	134	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	
<b>1%</b>																														
Alopecia of chest																														
Crust of back						7	7	7	7	3																				
Loose stool																														
Plantar erosion																														
Total number of objects observed	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	
Number of animals with findings	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Number of objects without findings	140	140	140	133	133	133	133	137	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	
<b>5%</b>																														
Crust formation																														
Alopecia of abdomen																														
Staining of urogenital region																														
Limping																														
Chromaturia																														
Plantar erosion																														
Total number of objects observed	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	
Number of animals with findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Number of objects without findings	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	

表 2-1-1 雄ラットの臨床所見(ルチン酵素分解物の1年間反復投与毒性試験)―続き―

Findings	Week Day	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52		
Control																													
Alopecia of forearm																													
Subcutaneous nodule																				1	7								
Facial subcutaneous nodule						2	7	1																				3	
Staining of urogenital region																											1	7	
Deep respiration																													
Cloudy urine																											1		
Plantar erosion																7	7	7	7	7	7	7	7	7	14	14	14	19	21
0.04%																													
Total number of objects observed		140	140	140	140	140	140	133	133	133	133	133	133	133	133	133	133	133	133	133	133	126	126	126	126	126	126	126	126
Number of animals with findings		0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	2	2	1	1	1	2	2	4	4	
Number of objects without findings		140	140	140	138	133	133	133	133	133	133	133	133	133	133	133	126	126	126	125	119	119	119	112	112	112	106	94	
0.20%																													
Swelling of left foot						1																							
Crust formation																													
Crust of dorsal neck																													
Alopecia of chest																													
Staining around eye																													
Plantar erosion																7	9	7	7	7	7	7	7	7	10	15	21	21	
1%																													
Total number of objects observed		140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
Number of animals with findings		0	0	0	0	0	2	1	0	1	0	1	1	1	1	0	1	2	1	1	1	1	1	1	1	2	3	3	
Number of objects without findings		140	140	140	140	138	133	133	133	133	133	133	133	133	133	133	130	133	133	133	133	133	133	133	130	125	119	119	
5%																													
Crust of dorsal neck																													
Crust of back																													
Auricular swelling																													
Plantar erosion																													
1%																													
Alopecia of chest		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Crust of back																													
Loose stool																													
Plantar erosion																													
5%																													
Total number of objects observed		140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	
Number of animals with findings		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	3	3	3	3	3	4	4	
Number of objects without findings		133	133	133	133	133	133	133	133	133	133	134	140	140	140	140	133	133	132	126	126	119	119	119	119	119	113	112	
5%																													
Crust formation																													
Alopecia of abdomen																													
Staining of urogenital region																													
Limping																													
Chromaturia																													
Plantar erosion																													
5%																													
Total number of objects observed		140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	
Number of animals with findings		0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Number of objects without findings		140	140	140	140	140	135	140	135	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133		

表 2-1-2 雌ラットの臨床所見(ルチン酵素分解物の1年間反復投与毒性試験)

Findings	Week							Day																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Control																										
0.04%																										
Alopecia of gluteal resion																										
Total number of objects observed	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
Number of animals with findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of objects without findings	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
0.20%																										
Alopecia of forearm																										
Total number of objects observed	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
Number of animals with findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of objects without findings	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
1%																										
Alopecia of chest																										
Total number of objects observed	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
Number of animals with findings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of objects without findings	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
5%																										
Systemic anemia																										
Gold to touch																										
Staining of urogenital region																										
Alopecia of gluteal resion																										
Decrease of locomotor activity																										
Deep respiration																										
Lacrimation																										
Hematuria																										
Opacification of vitreous body																										
Chromaturia																										
Total number of objects observed	140	140	140	140	140	140	140	140	135	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133
Number of animals with findings	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of objects without findings	140	140	140	140	140	140	140	140	133	126	126	126	126	126	126	126	126	126	126	126	126	126	119	119	120	126

表 2-1-2 雌ラットの臨床所見 (ルチン酵素分解物の1年間反復投与毒性試験) — 続き —

Findings	Week Day	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52				
Control																															
Total number of objects observed		140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140			
Number of animals with findings		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Number of objects without findings		140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	
0.04%																															
Alopecia of gluteal region																															
Total number of objects observed		140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	
Number of animals with findings		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Number of objects without findings		140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
0.20%																															
Total number of objects observed																															
Number of animals with findings																															
Number of objects without findings																															
1%																															
Alopecia of forearm																															
Alopecia of chest																															
Alopecia of gluteal region																															
Total number of objects observed		140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	
Number of animals with findings		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of objects without findings		133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	
5%																															
Systemic anemia																															
Cold to touch																															
Staining of urogenital region																															
Alopecia of gluteal region																															
Decrease of locomotor activity																															
Deep respiration																															
Lacrimation																															
Hematuria																															
Opacification of vitreous body																															
Chromaturia																															
Total number of objects observed		133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	
Number of animals with findings		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of objects without findings		126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126

表 2-2 ラット血液検査の所見(ルチン酵素分解物の1年間反復投与毒性試験)

Group	WBC 10 <sup>3</sup> /μl	RBC 10 <sup>6</sup> /μl	HB g/dl	HT %	MCV fl	MCH pg	MCHC g/dl	Plate 10 <sup>3</sup> /μl	Ret %	Neutro %	Lymph %	Mono %	Eosino %	Baso %			
Male	Cont.	Mean	8.20	15.3	44.4	54.4	18.6	34.2	959	4.7	28.4	66.7	2.6	1.6	0.4		
		SD	2.00	1.28	2.5	6.0	2.5	1.1	1.9	222	7.5	9.1	9.4	1.1	1.0	0.2	
	0.04%	Mean	6.60	8.33	15.6	44.9	54.5	18.9	34.7	918	3.6	27.2	67.7	2.4	1.8	0.3	
		SD	2.21	1.08	1.9	4.0	4.6	1.2	1.6	178	5.5	8.9	8.9	1.0	0.6	0.1	
	0.2%	Mean	5.84	8.43	15.8	45.8	54.6	18.8	34.5	938	2.9	24.3	71.1	2.1	1.6	0.4	
		SD	1.53	0.92	1.7	3.5	3.4	0.9	1.7	139	3.2	9.9	9.7	0.9	0.6	0.2	
	1%	Mean	6.09	8.37	15.6	44.8	53.7	18.6	34.8	999	3.2	26.4	68.8	2.3	1.5	0.4	
		SD	1.96	0.83	1.6	3.2	2.2	0.8	1.7	247	4.2	9.9	9.8	0.8	0.8	0.2	
	5%	Mean	7.29	8.38	15.8	45.6	54.9	19.0	34.6	887	2.0	22.1	72.9	2.6	1.4	0.4	
		SD	8.06	1.29	2.0	5.7	4.1	1.6	1.4	204	0.4	6.2	5.9	1.0	0.7	0.2	
	Female	Cont.	Mean	3.75	7.64	15.0	44.3	58.0	19.7	34.0	758	2.2	25.4	69.5	2.5	1.9	0.5
			SD	1.10	0.33	0.4	1.4	1.6	0.7	0.7	131	0.5	7.7	7.8	0.8	0.5	0.2
0.04%		Mean	3.69	7.86	15.4	45.2	57.5	19.6	34.1	768	2.2	23.9	70.5	2.9	1.9	0.5	
		SD	0.77	0.32	0.5	1.5	1.3	0.4	0.5	122	0.4	5.4	5.9	1.3	0.5	0.2	
0.2%		Mean	3.39	7.79	15.3	44.7	57.4	19.7	34.3	834	2.1	24.9	70.1	2.3	1.9	0.5	
		SD	0.83	0.29	0.5	1.7	1.7	0.6	0.7	102	0.5	6.6	7.1	0.9	0.8	0.2	
1%		Mean	3.97	7.79	15.4	45.0	57.8	19.7	34.1	819	2.1	24.1	70.7	2.4	1.9	0.5	
		SD	0.79	0.35	0.5	1.7	1.4	0.7	0.7	101	0.4	4.6	5.3	1.0	1.0	0.1	
5%		Mean	3.40	7.79	15.3	45.1	57.9	19.6	33.8	800	2.2	23.6	71.4	2.4	1.8	0.5	
		SD	0.66	0.21	0.5	1.6	1.7	0.6	0.5	105	0.4	5.3	5.5	1.1	0.7	0.2	

表 2-3 ラット血液生化学検査の所見(ルチン酵素分解物の1年間反復投与毒性試験)

Group		TP	ALB	A/G	Glu	CHO	TG	T-BIL	γ-GTP	ALT	AST	
		g/dl	g/dl		mg/dl	mg/dl	mg/dl	Mg/dl	IU/L	IU/L	IU/L	
Male	Cont.	Mean	2.8	0.8	148	89	163	0.1	1	74	136	
		SD	0.2	0.1	10	26	77	0.0	2	44	68	
	0.04%	Mean	2.8	0.8	147	90	159	0.1	0	55	101	
		SD	0.2	0.1	14	16	51	0.0	1	21	31	
	0.2%	Mean	2.9	0.9	155	81	164	0.1	0	56	105	
		SD	0.2	0.1	19	20	51	0.1	1	27	37	
	1%	Mean	2.9	0.9	150	75	126	0.0	0	48	92*	
		SD	0.2	0.1	13	14	32	0.1	1	15	28	
	5%	Mean	2.8	0.9	159	77	165	0.0	0	74	115	
		SD	0.3	0.1	16	19	74	0.1	1	43	52	
	Female	Cont.	Mean	3.2	1.0	145	75	171	0.1	0	115	192
			SD	0.2	0.1	15	20	127	0.0	1	66	96
0.04%		Mean	3.2	1.0	142	66	185	0.1	1	122	178	
		SD	0.3	0.2	12	16	142	0.0	2	63	90	
0.2%		Mean	3.3	1.0	144	77	197	0.1	1	141	201	
		SD	0.2	0.1	16	23	138	0.0	1	90	117	
1%		Mean	3.3	1.0	143	62	201	0.1	1	118	185	
		SD	0.4	0.2	16	14	156	0.0	1	96	133	
5%		Mean	3.3	1.0	145	65	146	0.1	0	86	158	
		SD	0.4	0.2	17	19	115	0.0	1	61	78	

\*: p<0.05

表 2-3 ラット血液生化学検査の所見(ルチン酵素分解物の1年間反復投与毒性試験)―続き―

Group		ALP	UN	CRE	CK	Ca	IP	Na	K	Cl	
		IU/L	mg/dl	mg/dl	IU/L	mg/dl	mg/dl	MEQ/L	MEQ/L	MEQ/L	
Male	Cont.	Mean	20	0.35	575	10.1	5.3	143	4.5	105	
		SD	3	0.04	365	0.4	1.0	2	0.4	2	
	0.04%	Mean	21	0.33	482	10.0	5.0	143	4.5	105	
		SD	2	0.05	271	0.3	0.6	1	0.4	1	
	0.2%	Mean	20	0.33	502	10.1	4.9	143	4.5	105	
		SD	2	0.04	207	0.3	0.5	1	0.3	1	
	1%	Mean	19	0.34	421	10.0	5.0	144	4.4	105	
		SD	3	0.05	194	0.3	0.6	1	0.3	1	
	5%	Mean	19	0.32	429	10.1	5.1	143	4.4	104	
		SD	3	0.03	192	0.2	0.4	1	0.4	1	
	Female	Cont.	Mean	24	0.33	261	10.2	4.7	143	4.1	105
			SD	3	0.03	118	0.4	1.0	2	0.5	2
0.04%		Mean	23	0.33	286	10.2	4.6	143	4.0	105	
		SD	3	0.04	118	0.1	0.8	2	0.4	2	
0.2%		Mean	23	0.33	240	10.4	4.7	143	4.1	105	
		SD	2	0.04	95	0.3	0.9	2	0.3	2	
1%		Mean	23	0.33	265	10.3	4.8	142	4.0	105	
		SD	3	0.03	101	0.4	0.8	2	0.3	2	
5%		Mean	23	0.33	317	10.4	4.6	143	3.9	106	
		SD	3	0.04	132	0.3	0.9	1	0.4	2	

表 2-4 ラットの絶対臓器重量 (g) (ルチン酵素分解物の1年間反復投与毒性試験)

Group	Final bw	Brain	Pitui.	Thyroid	Thym.	Heart	Lung	Liver	Spleen	Adren.	Kidney	Testes	Ovaries
<b>Male</b>													
Cont.	Mean	535.3	2.28	0.031	0.038	0.124	1.29	1.75	17.03	1.06	0.073	3.12	3.53
	SD	68.7	0.11	0.070	0.028	0.050	0.18	0.20	3.45	0.30	0.039	1.12	0.81
0.04%	Mean	550.5	2.32	0.014	0.036	0.133	1.24	1.79	17.06	0.98	0.062	2.91	3.78
	SD	73.4	0.10	0.005	0.014	0.060	0.16	0.25	2.59	0.35	0.012	0.38	0.42
0.2%	Mean	553.7	2.30	0.012	0.035	0.126	1.26	1.80	16.42	0.94	0.060	2.87	3.82
	SD	42.9	0.09	0.002	0.016	0.040	0.12	0.14	1.63	0.11	0.008	0.27	0.31
1%	Mean	525.4	2.29	0.012*	0.033	0.125	1.21	1.74	15.41	0.91	0.060	2.74	3.76
	SD	48.2	0.10	0.002	0.013	0.030	0.12	0.18	1.69	0.16	0.007	0.22	0.36
5%	Mean	562.7	2.30	0.012	0.041	0.181	1.28	1.84	16.98	1.26	0.067	3.15	3.75
	SD	53.3	0.09	0.001	0.019	0.208	0.13	0.23	2.14	1.48	0.005	0.30	0.22
<b>Female</b>													
Cont.	Mean	326.8	2.11	0.022	0.033	0.146	0.89	1.29	9.97	0.63	0.082	1.96	0.097
	SD	50.5	0.07	0.005	0.011	0.034	0.10	0.15	1.80	0.11	0.013	0.24	0.032
0.04%	Mean	336.4	2.09	0.021	0.031	0.157	0.88	1.28	10.30	0.69	0.082	1.97	0.106
	SD	43.6	0.08	0.005	0.010	0.045	0.10	0.10	1.47	0.12	0.014	0.21	0.026
0.2%	Mean	336.0	2.11	0.024	0.029	0.144	0.89	1.30	10.36	0.67	0.081	1.97	0.109
	SD	41.3	0.10	0.011	0.006	0.038	0.09	0.13	1.43	0.07	0.009	0.17	0.034
1%	Mean	333.5	2.10	0.021	0.029	0.166	0.88	1.28	10.10	0.66	0.082	1.88	0.113
	SD	37.2	0.06	0.004	0.005	0.092	0.08	0.11	1.35	0.08	0.010	0.18	0.026
5%	Mean	326.2	2.06	0.022	0.033	0.148	0.83	1.22	9.50	0.62	0.081	1.89	0.101
	SD	35.2	0.09	0.005	0.008	0.049	0.08	0.09	1.01	0.08	0.012	0.17	0.035

\*: p<0.05



表 2-5 ラットの相対臓器重量(g) (ルチン酵素分解物の1年間反復投与毒性試験)

Group	Final bw	Brain	Pitui.	Thyroid	Thym.	Heart	Lung	Liver	Spleen	Adren.	Kidney	Testes	Ovaries		
Male	Cont.	Mean	4.31	0.069	0.076	0.231	2.44	3.33	32.23	2.01	0.142	6.03	6.61		
		SD	68.7	0.54	0.177	0.073	0.085	0.55	0.62	8.69	0.62	0.101	3.14	1.43	
	0.04%	Mean	550.5	4.28	0.025	0.068	0.242	3.27	31.01	1.78	0.112	5.29	6.95	-	
		SD	73.4	0.57	0.009	0.034	0.106	0.37	2.12	0.66	0.019	0.37	1.02	-	
	0.2%	Mean	553.7	4.18	0.022	0.062	0.227	3.27	29.65	1.70	0.108	5.19	6.94	-	
		SD	42.9	0.38	0.004	0.027	0.071	0.24	1.94	0.19	0.012	0.32	0.74	-	
	1%	Mean	525.4	4.38	0.022	0.062	0.239	3.33	29.35	1.72	0.116	5.23	7.19	-	
		SD	48.2	0.41	0.003	0.021	0.055	0.28	1.86	0.21	0.014	0.32	0.76	-	
	5%	Mean	562.7	4.12	0.021	0.072	0.309	3.27	30.14	2.16	0.119	5.62	6.71	-	
		SD	53.3	0.37	0.002	0.032	0.306	0.32	1.84	2.14	0.011	0.44	0.66	-	
	Female	Cont.	Mean	326.8	6.59	0.068	0.100	0.449	2.75	4.00	30.50	1.94	0.253	6.07	0.302
			SD	50.5	0.88	0.015	0.027	0.100	0.53	2.31	0.24	0.036	0.68	0.75	0.107
0.04%		Mean	336.4	6.31	0.063	0.094	0.471	2.64	3.86	30.65	2.05	0.246	5.91	0.321	
		SD	43.6	0.85	0.015	0.033	0.137	0.27	2.35	0.27	0.043	0.75	0.75	0.096	
0.2%		Mean	336.0	6.37	0.071	0.088	0.436	2.66	3.92	30.84	2.00	0.244	5.92	0.326	
		SD	41.3	0.77	0.031	0.020	0.132	0.22	2.06	0.29	0.037	0.59	0.59	0.105	
1%		Mean	333.5	6.36	0.062	0.089	0.489	0.64	3.86	30.30	2.00	0.246	5.68	0.343	
		SD	37.2	0.72	0.012	0.019	0.217	0.20	2.42	0.28	0.027	0.51	0.51	0.084	
5%		Mean	326.2	6.39	0.068	0.101	0.459	2.55	3.77	29.22	1.89	0.252	5.85	0.310	
		SD	35.2	0.72	0.017	0.029	0.157	0.21	2.21	0.17	0.044	0.68	0.68	0.105	

表 2-6 ラットの尿検査値(ルチン酵素分解物の1年間反復投与毒性試験)

Group	Volume ml/day	Gravity g/ml	Na mEq/l	K mEq/l	Cl mEq/l	Ca mg/dl	Na mEq/day	K mEq/day	Cl mEq/day	Ca mg/day	
Male	Cont.	Mean	140	249.8	80	20.7	1.0	1.7	0.6	1.54	
		SD	53	57.2	28	8.1	0.4	0.4	0.2	0.95	
	0.04%	Mean	141	251.1	99	21.8	1.1	1.9	0.8	1.71	
		SD	51	74.3	49	7.1	0.3	0.4	0.3	0.61	
	0.2%	Mean	143	264.3	99	17.2	1.1	2.0	0.7	1.23	
		SD	46	48.9	36	7.5	0.4	0.5	0.3	0.46	
	1%	Mean	172	324.0*	133*	19.6	1.3	2.5**	1.0**	1.57	
		SD	35	53.5	37	8.0	0.4	0.5	0.3	0.76	
	5%	Mean	137	249.6	98	28.8*	1.3	2.3*	0.9*	2.69**	
		SD	35	48.6	34	3.9	0.2	0.3	0.3	0.64	
	Female	Cont.	Mean	160	298.5	118	30.4	0.9	1.8	0.7	1.90
			SD	34	54.1	27	6.2	0.2	0.7	0.2	0.98
0.04%		Mean	190	383.3	149	26.0	1.3	2.5	1.0	1.91	
		SD	74	158.5	69	6.3	0.5	1.0	0.5	0.90	
0.2%		Mean	198	382.6	145	24.9	1.2	2.3	0.9	1.59	
		SD	54	120.6	52	5.6	0.3	0.7	0.3	0.69	
1%		Mean	181	361.6	133	28.7	1.0	2.1	0.8	1.68	
		SD	44	44.4	26	4.0	0.3	0.7	0.3	0.65	
5%		Mean	118	245.0	98	31.7	1.0	2.1	0.8	3.01*	
		SD	40	85.3	43	4.6	0.3	0.7	0.4	1.33	

\*, p<0.05, \*\*, p<0.01

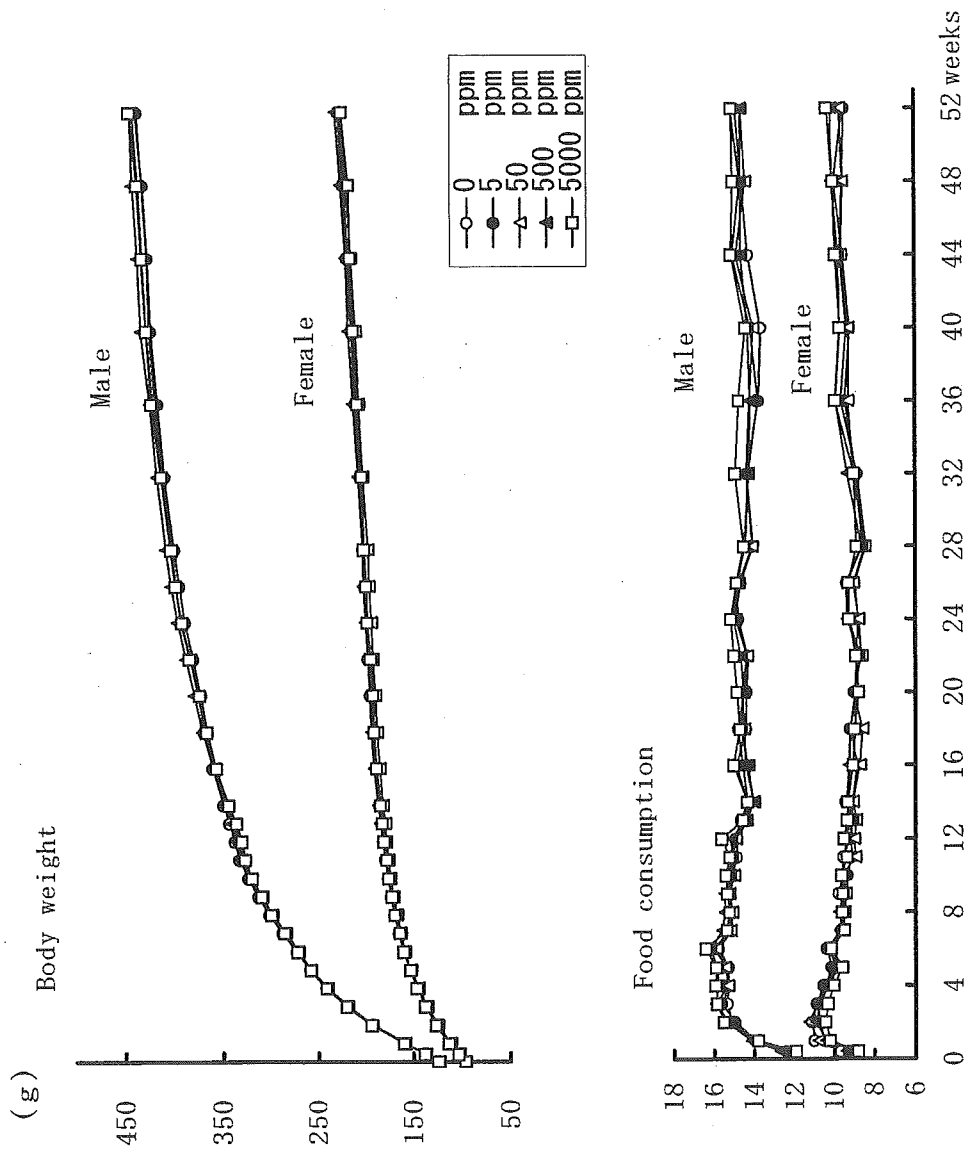


図3-1 体重及び摂餌量の推移 (ジヤマイカカシア抽出物のラットによる1年間反復投与毒性試験)

表 3 - 1 平均摂餌量及び平均被験物質摂取量(ジャマイカカシア抽出物のラットによる1年反復投与毒性試験)

Group	0 ppm	5 ppm	50 ppm	500 ppm	5000 ppm
Male					
Mean body weight ( g )	368.6 ± 74.7	366.2 ± 74.8	369.2 ± 76.4	372.8 ± 77.7	369.1 ± 76.5
Mean food intake ( g/rat/day )	14.5 ± 0.5	14.6 ± 0.5	14.6 ± 0.5	14.7 ± 0.5	15.0 ± 0.5
Mean jamaic quassia extract intake (mg/kg b.w. /d)	0 ±	0.21 ± 0.01	2.1 ± 0.6	20.6 ± 6.4	210.7 ± 60.2
Female					
Mean body weight ( g )	192.7 ± 29.4	193.0 ± 28.8	189.6 ± 28.0	194.7 ± 29.9	187.9 ± 29.2
Mean food intake ( g/rat/day )	9.4 ± 0.6	9.3 ± 0.6	9.3 ± 0.6	9.6 ± 0.5	9.5 ± 0.5
Mean jamaic-quassia extract intake (mg/kg b.w. /d)	0 ±	0.25 ± 0.01	2.5 ± 0.6	25.0 ± 5.4	258.2 ± 57.8

Values are mean ± SD.