

表3 ラット体重の推移(ホコッシ抽出物の1年間反復投与毒性試験)

Sex	Group	Weeks					
		0w	1w	2w	3w	4w	5w
Male	0	137.4 ± 9.3 <sup>a</sup>	181.0 ± 9.7	220.6 ± 9.5	257.5 ± 12.3	284.2 ± 15.2	319.1 ± 21.5
	0.04	136.5 ± 13.3	179.3 ± 16.0	218.6 ± 17.8	255.9 ± 21.7	284.8 ± 23.0	317.6 ± 26.5
	0.2	138.0 ± 7.4	179.2 ± 10.2	216.8 ± 14.4	252.1 ± 18.2	279.1 ± 20.5	309.7 ± 24.6
	1.0	136.5 ± 9.7	173.5 ± 14.7	211.1 ± 16.3	241.3 ± 22.8	265.8 ± 26.4 <sup>a</sup>	290.9 ± 29.6 <sup>**</sup>
	1.5	132.6 ± 7.7	159.8 ± 9.6 <sup>**</sup>	196.3 ± 10.6 <sup>*</sup>	222.8 ± 11.9 <sup>a</sup>	244.2 ± 12.6 <sup>a</sup>	262.8 ± 14.7 <sup>**</sup>
		6w	7w	8w	9w	10w	11w
	0	345.6 ± 25.6	374.1 ± 31.0	392.4 ± 33.9	413.5 ± 35.8	422.2 ± 37.3	436.3 ± 38.9
	0.04	345.4 ± 31.0	370.6 ± 35.0	391.9 ± 35.8	410.6 ± 38.5	420.5 ± 40.4	432.8 ± 42.6
	0.2	334.2 ± 28.1	357.4 ± 31.3	377.4 ± 33.8	390.0 ± 31.1	407.4 ± 37.9	410.9 ± 32.5
	1.0	310.9 ± 33.8 <sup>a</sup>	331.6 ± 35.9 <sup>a</sup>	348.0 ± 39.4 <sup>a</sup>	362.9 ± 41.8 <sup>a</sup>	372.8 ± 42.8 <sup>a</sup>	382.1 ± 44.0 <sup>**</sup>
	1.5	278.2 ± 15.6 <sup>a</sup>	293.9 ± 16.4 <sup>a</sup>	306.2 ± 17.5 <sup>a</sup>	315.9 ± 17.6 <sup>a</sup>	322.5 ± 18.8 <sup>a</sup>	330.2 ± 19.4 <sup>**</sup>
		12w	16w	21w	25w	29w	34w
	0	448.2 ± 40.3	485.4 ± 46.8	513.9 ± 46.94	534.9 ± 50.0	554.4 ± 51.1	579.2 ± 56.2
	0.04	443.3 ± 47.0	483.3 ± 49.5	515.4 ± 59.16	538.7 ± 69.2	562.8 ± 75.4	592.6 ± 83.4
	0.2	426.8 ± 41.4	456.3 ± 42.2	483.6 ± 46.30	504.7 ± 51.7	518.9 ± 54.8	540.4 ± 61.0
	1.0	390.5 ± 45.9 <sup>a</sup>	422.4 ± 49.6 <sup>a</sup>	452.0 ± 56.6 <sup>a</sup>	472.4 ± 62.9 <sup>a</sup>	485.8 ± 70.4 <sup>a</sup>	507.4 ± 78.2 <sup>a</sup>
	1.5	335.4 ± 20.6 <sup>a</sup>	363.4 ± 23.3 <sup>a</sup>	387.9 ± 25.5 <sup>**</sup>	403.4 ± 27.2 <sup>a</sup>	414.8 ± 29.8 <sup>a</sup>	433.1 ± 32.1 <sup>**</sup>
		38w	42w	47w	52w		
	0	596.5 ± 58.2	616.6 ± 62.6	637.0 ± 65.8	635.4 ± 63.4		
	0.04	613.2 ± 87.5	633.8 ± 90.8	659.5 ± 96.1	657.5 ± 98.4		
0.2	558.0 ± 66.3	572.1 ± 69.1	586.8 ± 69.5	580.4 ± 75.1			
1.0	522.9 ± 82.0 <sup>a</sup>	540.3 ± 88.7 <sup>a</sup>	558.4 ± 93.3 <sup>a</sup>	559.0 ± 93.7 <sup>a</sup>			
1.5	447.2 ± 33.1 <sup>a</sup>	460.8 ± 34.2 <sup>a</sup>	476.5 ± 36.3 <sup>a</sup>	477.3 ± 37.8 <sup>**</sup>			
Female	0	106.3 ± 6.3	131.1 ± 8.8	154.5 ± 9.9	172.7 ± 11.6	186.7 ± 14.1	201.3 ± 15.8
	0.04	109.6 ± 5.4	137.5 ± 7.4	161.1 ± 9.1	180.8 ± 11.3	195.6 ± 12.0	210.1 ± 12.1
	0.2	108.1 ± 7.1	133.0 ± 9.8	153.6 ± 11.4	169.8 ± 11.7	183.8 ± 13.2	196.4 ± 15.0
	1.0	106.7 ± 6.5	121.4 ± 7.4 <sup>**</sup>	137.0 ± 7.5 <sup>**</sup>	148.7 ± 7.5 <sup>**</sup>	157.0 ± 9.4 <sup>**</sup>	163.3 ± 9.7 <sup>**</sup>
	1.5	110.6 ± 5.2	124.0 ± 6.6 <sup>*</sup>	140.0 ± 8.5 <sup>**</sup>	150.0 ± 9.9 <sup>**</sup>	159.2 ± 10.2 <sup>a</sup>	164.1 ± 11.8 <sup>**</sup>
		6w	7w	8w	9w	10w	11w
	0	216.3 ± 16.4	226.8 ± 17.2	232.5 ± 18.9	238.4 ± 20.0	242.8 ± 18.3	249.4 ± 20.7
	0.04	224.5 ± 14.1	233.2 ± 14.8	240.1 ± 16.2	246.5 ± 16.1	251.0 ± 15.7	254.7 ± 18.1
	0.2	209.2 ± 16.3	216.2 ± 17.8	223.3 ± 18.7	226.5 ± 18.0	230.3 ± 20.2	233.1 ± 19.3 <sup>a</sup>
	1.0	170.5 ± 11.2 <sup>a</sup>	174.8 ± 10.3 <sup>a</sup>	180.4 ± 12.0 <sup>a</sup>	184.8 ± 12.5 <sup>a</sup>	188.3 ± 10.5 <sup>a</sup>	190.9 ± 12.0 <sup>**</sup>
	1.5	171.0 ± 13.3 <sup>a</sup>	176.2 ± 12.9 <sup>a</sup>	180.7 ± 13.9 <sup>a</sup>	183.2 ± 14.3 <sup>a</sup>	186.6 ± 12.9 <sup>a</sup>	189.4 ± 13.0 <sup>**</sup>
		12w	16w	21w	25w	29w	34w
	0	252.9 ± 21.2	268.6 ± 26.1	280.5 ± 29.8	288.5 ± 34.3	298.6 ± 35.6	313.3 ± 45.8
	0.04	259.2 ± 17.5	271.7 ± 19.0	281.0 ± 18.1	285.9 ± 21.6	294.4 ± 19.3	310.5 ± 24.6
	0.2	236.8 ± 20.0 <sup>a</sup>	250.1 ± 22.6 <sup>a</sup>	260.9 ± 26.9 <sup>a</sup>	264.0 ± 31.2 <sup>a</sup>	270.5 ± 32.8 <sup>a</sup>	285.6 ± 38.9 <sup>a</sup>
	1.0	194.3 ± 9.9 <sup>**</sup>	200.7 ± 11.9 <sup>a</sup>	208.4 ± 13.3 <sup>a</sup>	212.3 ± 14.7 <sup>a</sup>	216.4 ± 13.7 <sup>a</sup>	222.6 ± 15.1 <sup>**</sup>
	1.5	192.0 ± 14.0 <sup>a</sup>	200.4 ± 14.4 <sup>a</sup>	207.4 ± 15.2 <sup>a</sup>	214.4 ± 13.7 <sup>a</sup>	215.8 ± 15.6 <sup>a</sup>	223.4 ± 18.6 <sup>**</sup>
		38w	42w	47w	52w		
	0	325.9 ± 48.0	341.3 ± 54.0	361.3 ± 63.4	368.8 ± 69.0		
	0.04	322.7 ± 25.6	335.8 ± 31.8	346.6 ± 35.4	352.4 ± 35.6		
0.2	299.2 ± 46.6 <sup>a</sup>	311.2 ± 55.5 <sup>a</sup>	317.7 ± 59.0 <sup>a</sup>	324.7 ± 67.1 <sup>a</sup>			
1.0	223.8 ± 13.5 <sup>a</sup>	225.7 ± 15.2 <sup>a</sup>	233.3 ± 13.8 <sup>a</sup>	230.6 ± 15.4 <sup>**</sup>			
1.5	225.2 ± 16.4 <sup>a</sup>	227.7 ± 16.5 <sup>a</sup>	236.0 ± 17.9 <sup>a</sup>	232.3 ± 20.2 <sup>**</sup>			

<sup>a</sup>: Mean±SD

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

表4 ラットの平均摂餌量(ホコッシ抽出物の1年間反復投与毒性試験)

Sex	Group	Weeks							
		1w	2w	3w	4w	5w	6w	7w	
Male	0	15.46 ± 0.73 <sup>a</sup>	16.66 ± 0.67	18.08 ± 0.60	19.20 ± 0.50	17.67 ± 0.92	24.00 ± 0.93	21.38 ± 0.71	
	0.04	14.82 ± 1.12	16.71 ± 0.85	19.16 ± 1.06	19.41 ± 1.25	18.01 ± 1.16	24.49 ± 2.24	22.13 ± 2.19	
	0.2	13.98 ± 1.26	16.06 ± 1.07	16.54 ± 1.14 <sup>*</sup>	17.40 ± 0.51 <sup>*</sup>	16.64 ± 0.54	21.73 ± 0.67	19.76 ± 0.48	
	1.0	14.68 ± 1.26	16.85 ± 1.07	16.31 ± 1.14 <sup>*</sup>	16.61 ± 0.51 <sup>*</sup>	15.69 ± 0.54 <sup>*</sup>	20.89 ± 0.67	18.84 ± 0.48 <sup>*</sup>	
	1.5	13.29 ± 2.76	15.77 ± 0.79	15.88 ± 0.47 <sup>*</sup>	15.66 ± 0.80 <sup>*</sup>	14.24 ± 0.53 <sup>*</sup>	19.00 ± 2.07 <sup>*</sup>	16.93 ± 0.62 <sup>**</sup>	
		8w	9w	10w	11w	12w	16w	21w	
	0	20.93 ± 0.71	21.18 ± 0.59	20.97 ± 0.85	20.78 ± 0.81	20.39 ± 0.67	20.05 ± 0.41	19.01 ± 0.56	
	0.04	22.12 ± 1.57	21.67 ± 1.54	21.22 ± 1.61	20.83 ± 1.79	20.05 ± 1.34	19.96 ± 1.11	19.73 ± 0.25	
	0.2	19.97 ± 0.20	19.66 ± 1.07	19.76 ± 0.99	18.92 ± 0.54	18.73 ± 0.28	19.08 ± 0.26	17.99 ± 0.48	
	1.0	18.61 ± 0.20 <sup>*</sup>	18.89 ± 1.07 <sup>*</sup>	18.25 ± 0.99 <sup>*</sup>	17.88 ± 0.54 <sup>*</sup>	17.96 ± 0.28 <sup>*</sup>	18.28 ± 0.26 <sup>*</sup>	17.86 ± 0.48	
	1.5	17.42 ± 0.77 <sup>*</sup>	17.08 ± 0.61 <sup>*</sup>	16.56 ± 0.45 <sup>*</sup>	16.67 ± 1.10 <sup>*</sup>	16.61 ± 1.12 <sup>*</sup>	16.66 ± 0.41 <sup>*</sup>	16.15 ± 0.35 <sup>**</sup>	
		25w	29w	34w	38w	42w	47w	52w	
	0	20.26 ± 0.66	17.52 ± 0.85	18.43 ± 1.19	19.63 ± 1.23	19.55 ± 1.10	19.67 ± 1.40	18.98 ± 0.61	
	0.04	20.96 ± 1.09	19.49 ± 2.18	19.88 ± 1.10	20.33 ± 1.51	20.22 ± 1.61	21.33 ± 1.70	22.38 ± 2.62 <sup>*</sup>	
	0.2	19.81 ± 0.64	16.97 ± 0.76	18.24 ± 1.09	18.84 ± 0.94	18.52 ± 1.27	18.67 ± 1.15	20.09 ± 1.25	
1.0	19.64 ± 0.64	16.77 ± 0.76	17.58 ± 1.09	18.57 ± 0.94	17.90 ± 1.27	18.62 ± 1.15	20.58 ± 1.25		
1.5	17.84 ± 0.52 <sup>*</sup>	15.81 ± 1.87	16.18 ± 0.56 <sup>*</sup>	16.68 ± 0.51 <sup>*</sup>	16.84 ± 0.41 <sup>*</sup>	16.97 ± 0.34 <sup>*</sup>	19.20 ± 0.44		
Female		1w	2w	3w	4w	5w	6w	7w	
	0	11.54 ± 2.13	12.29 ± 0.39	13.26 ± 0.40	13.80 ± 0.79	12.93 ± 2.73	16.28 ± 0.97	14.14 ± 1.13	
	0.04	11.31 ± 0.91	13.25 ± 0.67	13.76 ± 0.21	14.36 ± 0.06	12.57 ± 0.29	16.76 ± 0.14	15.11 ± 0.31	
	0.2	10.77 ± 2.52	11.41 ± 0.78	12.27 ± 0.31	12.52 ± 1.27	11.20 ± 0.74	15.16 ± 1.01	13.68 ± 1.00	
	1.0	10.31 ± 2.52	11.67 ± 0.78	12.05 ± 1.14 <sup>*</sup>	10.96 ± 1.05 <sup>*</sup>	10.39 ± 2.26	14.37 ± 2.12	10.91 ± 2.33 <sup>*</sup>	
	1.5	12.44 ± 4.11	11.18 ± 0.97	11.24 ± 0.50 <sup>*</sup>	9.91 ± 1.05 <sup>*</sup>	8.45 ± 1.18 <sup>*</sup>	11.93 ± 1.49 <sup>*</sup>	10.28 ± 0.88 <sup>**</sup>	
		8w	9w	10w	11w	12w	16w	21w	
	0	13.79 ± 1.69	13.76 ± 0.08	13.58 ± 0.16	13.05 ± 0.28	12.92 ± 0.16	13.04 ± 0.33	12.55 ± 0.15	
	0.04	14.64 ± 0.44	14.57 ± 0.25	14.04 ± 0.73	13.76 ± 0.70	13.77 ± 0.73	13.33 ± 0.73	13.40 ± 1.69	
	0.2	13.35 ± 0.65	12.74 ± 0.55	12.92 ± 0.68	12.45 ± 0.59	12.93 ± 0.95	12.70 ± 0.99	12.15 ± 0.93	
	1.0	10.26 ± 1.50 <sup>*</sup>	11.23 ± 0.11 <sup>*</sup>	12.26 ± 1.46	11.95 ± 1.44	11.82 ± 1.43	11.44 ± 1.44	11.66 ± 1.26	
	1.5	10.47 ± 0.98 <sup>*</sup>	10.86 ± 0.93 <sup>*</sup>	11.56 ± 1.96	11.54 ± 1.49	11.97 ± 2.33	11.96 ± 1.45	13.04 ± 3.40	
		25w	29w	34w	38w	42w	47w	52w	
	0	15.00 ± 0.09	11.48 ± 0.20	12.32 ± 0.74	13.36 ± 0.56	13.58 ± 0.48	13.60 ± 0.66	14.30 ± 0.91	
	0.04	15.17 ± 0.63	11.75 ± 0.81	13.21 ± 0.99	13.60 ± 1.11	13.28 ± 0.84	13.28 ± 0.39	14.45 ± 0.77	
0.2	14.93 ± 0.60	10.94 ± 0.43	12.23 ± 0.59	13.09 ± 1.01	12.38 ± 0.96	12.59 ± 0.48	14.27 ± 0.92		
1.0	14.41 ± 1.81	11.03 ± 1.46	11.58 ± 0.99	11.48 ± 0.80	11.24 ± 0.31 <sup>*</sup>	11.72 ± 1.41	12.50 ± 0.37		
1.5	14.50 ± 2.71	11.41 ± 2.85	11.80 ± 2.93	12.13 ± 3.49	10.65 ± 1.04 <sup>*</sup>	12.62 ± 1.58	14.81 ± 1.11		

<sup>a</sup>: Mean±SD

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

表5 ラットの平均被験物質摂取量(ホコッシ抽出物の1年間反復投与毒性試験)

Sex	Group	Body weight (g)	Mean food consumption (g/day/rat)	Mean daily intake of Hokosshi (mg/day/kg)
Male	0	635.4 ± 63.4 <sup>a</sup>	19.06 ± 1.99	0 ± 0
	0.04	657.5 ± 98.4	19.14 ± 2.38	15.82 ± 4.04
	0.2	580.4 ± 75.1	18.29 ± 2.25	76.27 ± 18.09
	1.0	559.0 ± 93.7 <sup>*</sup>	17.92 ± 1.93 <sup>*</sup>	405.28 ± 93.02
	1.5	477.3 ± 37.8 <sup>**</sup>	16.46 ± 1.74 <sup>**</sup>	644.84 ± 135.60
Female	0	368.8 ± 69.0	13.07 ± 1.61	0 ± 0
	0.04	352.4 ± 35.6	13.40 ± 1.64	19.20 ± 3.72
	0.2	324.7 ± 67.1 <sup>*</sup>	12.54 ± 1.70	97.48 ± 15.41
	1.0	230.6 ± 15.4 <sup>**</sup>	11.58 ± 1.64 <sup>**</sup>	572.61 ± 92.35
	1.5	232.3 ± 20.2 <sup>**</sup>	11.93 ± 2.63 <sup>*</sup>	875.32 ± 170.16

<sup>a</sup>: Mean ± SD

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

表6 血液学的検査(ホコッシ抽出物の1年間反復投与毒性試験)

	Group				
	0	0.04	0.2	1	1.5
<b>Male</b>					
No. of rats examined	12	11	12	12	23
RBC count( $10^4/\text{mm}^3$ )	866.7 <sup>a</sup> ± 41.0	804.1 ± 188.8	883.3 ± 32.3	847.4 ± 39.8	835.9 ± 34.4
Hb(g/dl)	15.0 ± 0.7	14.3 ± 2.6	15.3 ± 0.5	15.0 ± 0.5	14.9 ± 0.5
Ht(%)	41.3 ± 1.8	39.4 ± 6.9	42.0 ± 1.3	41.7 ± 1.2	41.6 ± 1.3
Plt count( $10^4/\text{mm}^3$ )	114.2 ± 15.0	94.4 ± 25.1**	111.7 ± 14.6	95.7 ± 11.8**	93.2 ± 11.3**
MCV(fl)	47.7 ± 1.4	51.0 ± 9.5	47.6 ± 1.5	49.2 ± 1.6	49.9 ± 1.6
MCH(pg)	17.3 ± 0.4	18.4 ± 3.0	17.4 ± 0.5	17.8 ± 0.5	17.9 ± 0.5
MCHC(g/dl)	36.4 ± 0.4	36.2 ± 0.7	36.5 ± 0.5	36.1 ± 0.4	35.8 ± 0.3**
WBC count(/ $\text{mm}^3$ )	1617.5 ± 758.0	2210.9 ± 1138.1	2115.8 ± 778.2	1940.8 ± 590.6	1379.6 ± 529.3
No. of rats examined	12	11	12	12	23
neutrophils(%)	32.6 ± 9.0	36.3 ± 18.8	36.5 ± 8.8	38.5 ± 9.5	34.6 ± 8.3
Lymphocytes(%)	61.5 ± 9.8	56.8 ± 19.1	57.3 ± 9.3	55.9 ± 9.1	59.9 ± 8.6
Monocytes(%)	3.7 ± 1.8	4.8 ± 4.9	4.4 ± 2.0	3.9 ± 2.6	3.6 ± 1.7
Eosinophils(%)	2.1 ± 0.7	2.1 ± 1.6	1.9 ± 0.6	1.7 ± 0.7	1.9 ± 1.0
<b>Female</b>					
No. of rats examined	12	11	12	12	24
RBC count( $10^4/\text{mm}^3$ )	765.6 ± 34.5	766.7 ± 40.1	756.5 ± 40.7	755.7 ± 52.0	747.2 ± 38.3
Hb(g/dl)	14.6 ± 0.6	14.6 ± 0.6	14.5 ± 0.7	14.2 ± 0.8	13.8 ± 0.8*
Ht(%)	40.7 ± 1.9	40.7 ± 1.6	40.8 ± 1.8	40.2 ± 2.2	39.1 ± 2.2
Plt count( $10^4/\text{mm}^3$ )	96.0 ± 8.4	87.5 ± 9.2	88.2 ± 10.7	91.0 ± 16.0	94.7 ± 10.6
MCV(fl)	53.2 ± 1.5	53.1 ± 1.9	54.1 ± 2.7	53.3 ± 2.2	52.4 ± 1.8
MCH(pg)	19.0 ± 0.4	19.1 ± 0.6	19.2 ± 0.7	18.8 ± 0.6	18.5 ± 0.6*
MCHC(g/dl)	35.9 ± 0.4	36.0 ± 0.5	35.6 ± 0.6	35.4 ± 0.5*	35.3 ± 0.4**
WBC count(/ $\text{mm}^3$ )	794.2 ± 223.8	1100.9 ± 386.2*	862.5 ± 329.3	782.5 ± 138.4	637.9 ± 224.4
No. of rats examined	12	11	12	12	24
neutrophils(%)	44.4 ± 13.1	38.0 ± 14.6	39.4 ± 10.9	27.8 ± 8.1**	30.5 ± 8.0**
Lymphocytes(%)	48.2 ± 13.1	55.1 ± 15.6	52.5 ± 11.8	66.9 ± 9.4**	64.4 ± 9.9**
Monocytes(%)	4.9 ± 4.7	4.9 ± 2.5	5.2 ± 4.6	2.9 ± 1.5	2.3 ± 2.9
Eosinophils(%)	2.5 ± 0.9	2.0 ± 1.0	3.0 ± 1.3	2.5 ± 1.5	2.8 ± 2.7

<sup>a</sup>: Mean±SD

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

表7 血液生化学的検査(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	1.5
<b>Male</b>					
No. of rats examined	12	11	12	12	24
TP(g/dl)	6.8 ± 0.3 <sup>a</sup>	6.7 ± 0.2	6.8 ± 0.2	6.7 ± 0.2	6.5 ± 0.2**
Alb(g/dl)	4.8 ± 0.2	4.6 ± 0.3*	4.7 ± 0.1	4.6 ± 0.1	4.6 ± 0.1*
A/G	2.4 ± 0.3	2.2 ± 0.3	2.2 ± 0.2	2.2 ± 0.1	2.6 ± 0.3
GOT(IU/l)	102.6 ± 31.7	89.1 ± 11.2	102.4 ± 16.0	93.9 ± 12.2	78.9 ± 11.4**
GPT(IU/l)	49.6 ± 62.9	40.6 ± 7.1	42.4 ± 20.4	38.8 ± 10.2	29.3 ± 5.3
ALP(IU/l)	276.8 ± 59.6	297.1 ± 55.2	297.9 ± 75.5	236.8 ± 49.9	269.6 ± 69.3
γ-GTP(IU/l)	1.3 ± 0.5	3.5 ± 1.8**	3.0 ± 1.5*	1.9 ± 0.9	2.3 ± 1.9
CRE(mg/dl)	0.36 ± 0.03	0.34 ± 0.03	0.35 ± 0.03	0.37 ± 0.06	0.33 ± 0.04
BUN(mg/dl)	15.6 ± 1.8	15.4 ± 2.7	14.4 ± 1.7	15.4 ± 1.9	16.0 ± 2.1
Glu(mg/dl)	138.9 ± 22.2	139.5 ± 12.5	129.8 ± 15.1	129.3 ± 13.0	142.5 ± 13.5
TG(mg/dl)	198.6 ± 38.5	200.5 ± 83.7	151.7 ± 41.5	131.7 ± 57.9*	127.2 ± 55.1**
T-Cho(mg/dl)	97.6 ± 17.6	115.7 ± 25.5	113.3 ± 29.2	107.8 ± 36.2	91.0 ± 16.9
Na(mEQ/l)	140.6 ± 1.1	140.3 ± 1.1	140.7 ± 1.1	141.8 ± 1.5*	141.2 ± 0.9
K(mEQ/l)	5.5 ± 0.3	5.6 ± 0.4	5.4 ± 0.4	4.9 ± 0.3**	5.1 ± 0.4**
Cl(mEQ/l)	102.3 ± 1.6	104.0 ± 2.0*	103.3 ± 1.3	104.8 ± 1.1**	103.5 ± 1.1*
Ca(mg/dl)	10.2 ± 0.2	10.1 ± 0.3	10.2 ± 0.2	10.1 ± 0.3	10.3 ± 0.3
IP(mg/dl)	4.5 ± 0.5	4.5 ± 0.5	5.0 ± 0.6*	5.0 ± 0.5*	5.1 ± 0.4**
Total Bil(mg/dl)	0.10 ± 0.00	0.10 ± 0.00	0.10 ± 0.00	0.10 ± 0.00	0.10 ± 0.00
<b>Female</b>					
No. of rats examined	12	12	12	12	24
TP(g/dl)	7.1 ± 0.3	7.2 ± 0.3	7.2 ± 0.3	7.2 ± 0.4	7.2 ± 0.4
Alb(g/dl)	5.4 ± 0.3	5.6 ± 0.2	5.5 ± 0.3	5.4 ± 0.3	5.2 ± 0.3
A/G	3.1 ± 0.3	3.5 ± 0.6**	3.3 ± 0.4	3.2 ± 0.2	2.7 ± 0.3**
GOT(IU/l)	84.8 ± 19.6	89.8 ± 18.3	102.0 ± 33.1	73.7 ± 13.4	66.1 ± 9.9*
GPT(IU/l)	32.3 ± 7.0	31.6 ± 8.2	42.6 ± 14.8**	26.1 ± 5.4	28.9 ± 5.9
ALP(IU/l)	79.9 ± 41.8	81.6 ± 38.4	74.7 ± 13.4	83.9 ± 50.2	94.0 ± 29.0
γ-GTP(IU/l)	1.5 ± 0.9	2.2 ± 0.8	2.6 ± 0.8**	3.1 ± 1.0**	2.0 ± 0.9
CRE(mg/dl)	0.38 ± 0.04	0.40 ± 0.07	0.42 ± 0.05	0.40 ± 0.06	0.38 ± 0.04
BUN(mg/dl)	18.3 ± 3.7	15.3 ± 3.2	16.4 ± 2.8	17.5 ± 2.8	18.7 ± 4.4
Glu(mg/dl)	129.8 ± 12.2	131.3 ± 16.7	114.8 ± 14.7	115.8 ± 18.4	120.3 ± 17.6
TG(mg/dl)	217.8 ± 109.0	165.3 ± 126.6	181.5 ± 103.9	52.0 ± 31.9**	104.3 ± 42.1**
T-Cho(mg/dl)	84.5 ± 22.0	88.1 ± 23.6	91.8 ± 20.4	58.3 ± 19.7**	58.8 ± 16.2**
Na(mEQ/l)	137.7 ± 1.5	138.5 ± 1.9	137.3 ± 1.5	137.7 ± 1.0	139.4 ± 1.4**
K(mEQ/l)	5.9 ± 0.6	4.8 ± 0.8**	5.3 ± 0.3**	4.8 ± 0.3**	5.0 ± 0.5**
Cl(mEQ/l)	102.8 ± 2.1	103.0 ± 2.4	102.6 ± 1.8	101.9 ± 1.7	104.2 ± 1.9
Ca(mg/dl)	10.3 ± 0.4	10.5 ± 0.5	10.3 ± 0.3	10.4 ± 0.2	10.2 ± 0.3
IP(mg/dl)	3.7 ± 0.8	4.1 ± 0.5	3.1 ± 0.5*	4.6 ± 0.6**	3.8 ± 0.8
Total Bil(mg/dl)	0.10 ± 0.00	0.10 ± 0.00	0.10 ± 0.00	0.11 ± 0.03	0.10 ± 0.00

<sup>a</sup>: Mean±SD

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

表8 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
Male	No. of animals	12 <sup>a</sup>	11	12	12	24
	B.W. (g)	635.4 ± 63.4 <sup>b</sup>	657.5 ± 98.4	595.3 ± 88.4	559.0 ± 93.7	477.3 ± 37.8
	Organs (g)					
	Brain	2.00 ± 0.14	1.99 ± 0.17	1.99 ± 0.11	2.01 ± 0.12	1.99 ± 0.13
	Thymus	0.51 ± 0.14	0.56 ± 0.17	0.50 ± 0.19	0.44 ± 0.21	0.33 ± 0.09**
	Heart	1.43 ± 0.15	1.42 ± 0.19	1.23 ± 0.11**	1.20 ± 0.20**	1.17 ± 0.14**
	Lung	1.68 ± 0.20	1.62 ± 0.12	1.53 ± 0.11	1.54 ± 0.21	1.40 ± 0.21**
	Liver	14.64 ± 1.75	14.05 ± 2.13	12.87 ± 2.34	12.29 ± 2.40*	10.42 ± 1.27**
	Spleen	0.97 ± 0.11	1.17 ± 1.00	0.89 ± 0.18	0.86 ± 0.20	0.77 ± 0.14
	Kidney	2.56 ± 0.22	2.57 ± 0.28	2.49 ± 0.38	2.52 ± 0.49	2.28 ± 0.21*
	Adrenal	0.06 ± 0.01	0.06 ± 0.02	0.07 ± 0.01	0.07 ± 0.01	0.05 ± 0.01*
Testis	3.81 ± 0.41	3.65 ± 0.81	3.83 ± 0.36	3.82 ± 0.39	3.70 ± 0.28	
Female	No. of animals	12 <sup>a</sup>	12	12	12	24
	B.W. (g)	368.8 ± 69.0 <sup>b</sup>	352.4 ± 35.6	319.3 ± 66.7	230.6 ± 15.4	232.3 ± 20.2
	Organs (g)					
	Brain	1.84 ± 0.10	1.89 ± 0.10	1.89 ± 0.05	1.88 ± 0.10	1.83 ± 0.07
	Thymus	0.37 ± 0.16	0.26 ± 0.05**	0.23 ± 0.07**	0.17 ± 0.04**	0.17 ± 0.04**
	Heart	0.90 ± 0.08	0.84 ± 0.08*	0.78 ± 0.07**	0.67 ± 0.07**	0.67 ± 0.07**
	Lung	1.04 ± 0.14	1.09 ± 0.10	1.08 ± 0.09	0.96 ± 0.06*	0.90 ± 0.06**
	Liver	7.30 ± 1.00	6.95 ± 0.79	6.49 ± 1.05*	5.26 ± 0.42**	5.53 ± 0.43**
	Spleen	0.57 ± 0.08	0.58 ± 0.09	0.53 ± 0.10	0.46 ± 0.06**	0.43 ± 0.06**
	Kidney	1.66 ± 0.13	1.66 ± 0.12	1.57 ± 0.18	1.33 ± 0.15**	1.30 ± 0.11**
	Adrenal	0.07 ± 0.01	0.07 ± 0.01	0.07 ± 0.01	0.06 ± 0.01*	0.05 ± 0.01**
Ovary	0.16 ± 0.06	0.50 ± 1.23	0.13 ± 0.05	0.11 ± 0.02	0.13 ± 0.09	
Uterus	0.67 ± 0.29	0.79 ± 0.27	1.29 ± 1.22*	0.70 ± 0.19	0.74 ± 0.26	

<sup>a</sup>: Numbers in parenthesis represent the number of samples examined

<sup>b</sup>: Mean ± SD

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

表9 ラットの相対的臓器重量比(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
Male	No. of animals	12 <sup>a</sup>	11	12	12	24
	Organs					
	Brain	3.18 ± 0.40 <sup>b</sup>	3.10 ± 0.57	3.40 ± 0.55	3.69 ± 0.60*	4.20 ± 0.40**
	Thymus	0.80 ± 0.18	0.85 ± 0.19	0.84 ± 0.26	0.78 ± 0.29	0.69 ± 0.16
	Heart	2.27 ± 0.23	2.17 ± 0.20	2.09 ± 0.24	2.16 ± 0.14	2.45 ± 0.20*
	Lung	2.66 ± 0.29	2.52 ± 0.42	2.62 ± 0.35	2.79 ± 0.29	2.94 ± 0.43
	Liver	23.03 ± 1.28	21.40 ± 1.45	21.62 ± 1.79	21.92 ± 1.60	21.80 ± 1.72
	Spleen	1.54 ± 0.18	1.82 ± 1.63	1.50 ± 0.23	1.54 ± 0.23	1.60 ± 0.23
	Kidney	4.04 ± 0.33	3.94 ± 0.31	4.22 ± 0.53	4.53 ± 0.60*	4.80 ± 0.50**
	Adrenal	0.09 ± 0.01	0.10 ± 0.02	0.12 ± 0.02*	0.12 ± 0.03*	0.11 ± 0.02
	Testis	6.04 ± 0.83	5.53 ± 0.89	6.55 ± 0.96	6.93 ± 0.80*	7.81 ± 0.90**
Female	No. of animals	12 <sup>a</sup>	12	12	12	24
	Organs					
	Brain	5.16 ± 0.10 <sup>b</sup>	5.40 ± 0.59	6.13 ± 1.20**	8.16 ± 0.50**	7.93 ± 0.70**
	Thymus	0.96 ± 0.28	0.73 ± 0.10*	0.72 ± 0.10*	0.73 ± 0.20**	0.75 ± 0.20**
	Heart	2.51 ± 0.38	2.40 ± 0.29	2.52 ± 0.37	2.90 ± 0.30*	2.89 ± 0.30**
	Lung	2.92 ± 0.73	3.13 ± 0.40	3.47 ± 0.56	4.17 ± 0.30**	3.89 ± 0.40**
	Liver	20.12 ± 2.93	19.75 ± 1.48	20.60 ± 2.40	22.85 ± 2.0**	23.95 ± 2.20**
	Spleen	1.56 ± 0.24	1.67 ± 0.29	1.70 ± 0.37	1.97 ± 0.20**	1.89 ± 0.30**
	Kidney	4.60 ± 0.70	4.74 ± 0.34	5.02 ± 0.67	5.76 ± 0.51**	5.62 ± 0.30**
	Adrenal	0.19 ± 0.05	0.21 ± 0.04	0.21 ± 0.05	0.25 ± 0.03**	0.24 ± 0.60**
	Ovary	0.44 ± 0.18	1.48 ± 3.73	0.41 ± 0.16	0.48 ± 0.11	0.56 ± 0.04
Uterus	1.93 ± 1.00	2.30 ± 0.92	4.43 ± 4.90*	3.07 ± 0.84	3.19 ± 0.11	

<sup>a</sup>: Numbers in parenthesis represent the number of samples examined

<sup>b</sup>: Relative organ weight was calculated as follows: (organ weight/ body weight)×1000. Value are means ±S.D..

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

表10 実験期間中に死亡、又は剖検したラット数(ホコッシ抽出物の発がん性試験)

	Group	No. of total rats	No. of dead rats
Male	0	50	16
	0.04	50	12
	0.2	50	13
	1	50	13
Female	0	50	22
	0.04	50	19
	0.2	50	23
	1	50	6 *

\* : Significantly different from the untreated control value at the level of  $p < 0.005$

図3 雄ラットの生存曲線(ホコッシ抽出物の発がん性試験)

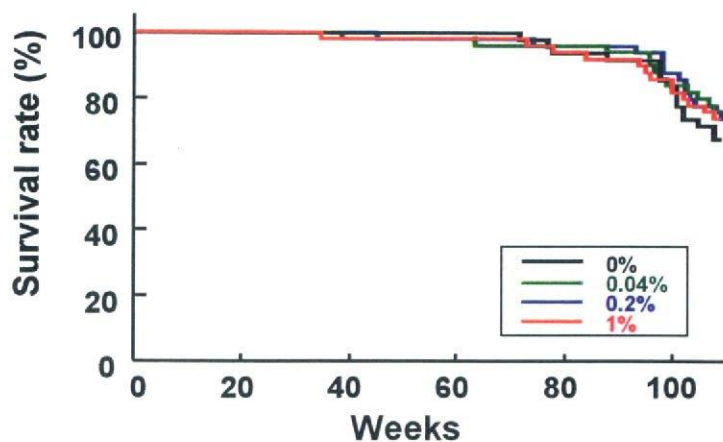


図4 雌ラットの生存曲線(ホコッシ抽出物の発がん性試験)

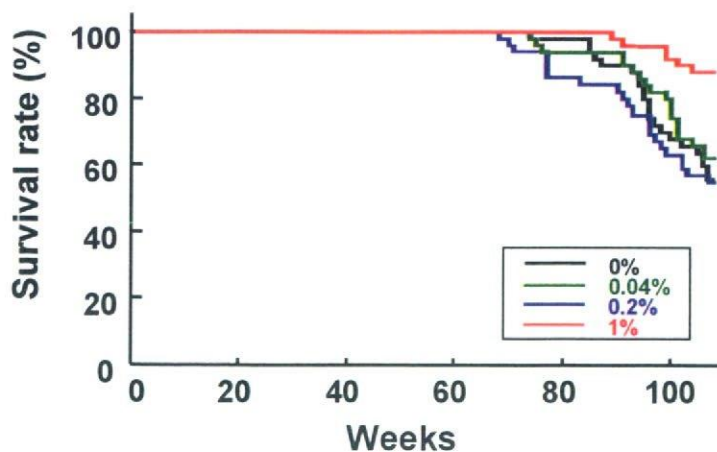


図5 ラット体重の推移(ホコッシ抽出物の発がん性試験)

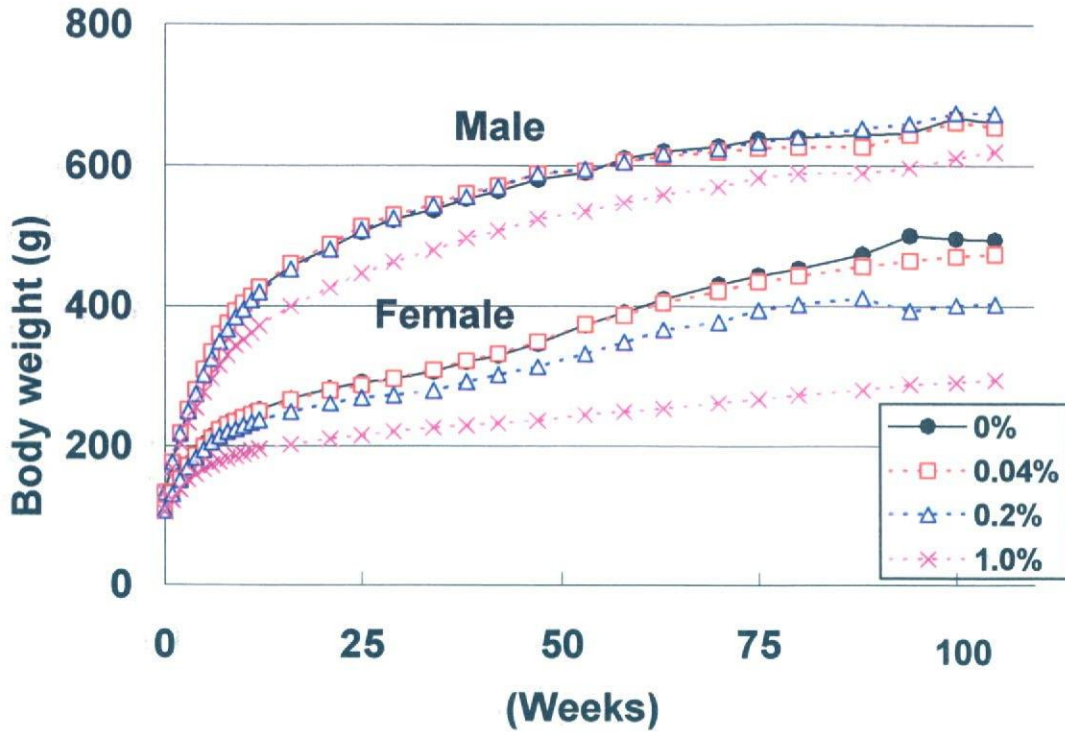


表11 ラット体重の推移(ホコッソ抽出物の発がん性試験)

Sex	Group	Weeks							
		0w	1w	2w	3w	4w	5w	6w	
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	331.3 ± 22.8	
	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	334.4 ± 22.3	
	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	324.7 ± 21.8	
	1.0	133.1 ± 8.2	168.4 ± 11.5 <sup>a</sup>	204.8 ± 13.6 <sup>**</sup>	234.1 ± 16.5 <sup>**</sup>	255.6 ± 18.4 <sup>**</sup>	276.5 ± 21.6 <sup>a</sup>	296.5 ± 24.5 <sup>**</sup>	
		7w	8w	9w	10w	11w	12w	16w	
	0	355.7 ± 24.3	373.2 ± 26.5	389.4 ± 27.8	401.1 ± 29.2	414.2 ± 30.4	424.9 ± 31.7	456.2 ± 35.4	
	0.04	360.3 ± 24.3	376.0 ± 26.5	393.1 ± 28.3	404.1 ± 30.5	414.8 ± 31.8	426.8 ± 33.3	461.1 ± 38.9	
	0.2	349.4 ± 25.2	366.1 ± 27.0	384.2 ± 29.2	395.4 ± 31.3	408.2 ± 32.5	419.7 ± 34.0	452.9 ± 39.3	
	1.0	315.8 ± 27.1 <sup>**</sup>	330.0 ± 29.2 <sup>a</sup>	343.8 ± 31.5 <sup>**</sup>	352.1 ± 32.4 <sup>**</sup>	361.8 ± 33.8 <sup>**</sup>	372.4 ± 35.5 <sup>a</sup>	400.0 ± 39.8 <sup>**</sup>	
		21w	25w	29w	34w	38w	42w	47w	
	0	482.7 ± 40.9	505.7 ± 43.8	523.1 ± 46.8	536.3 ± 49.5	552.5 ± 52.9	563.6 ± 55.1	580.3 ± 57.5	
	0.04	488.4 ± 44.7	514.1 ± 49.0	530.1 ± 54.1	545.0 ± 58.1	560.7 ± 61.6	571.5 ± 65.2	589.4 ± 68.7	
	0.2	481.3 ± 45.9	508.6 ± 50.6	524.6 ± 52.9	542.9 ± 58.3	555.5 ± 61.0	569.8 ± 63.5	588.5 ± 66.5	
	1.0	426.5 ± 46.0 <sup>**</sup>	446.7 ± 49.8 <sup>a</sup>	463.6 ± 53.1 <sup>**</sup>	480.4 ± 58.1 <sup>**</sup>	497.5 ± 62.9 <sup>**</sup>	507.2 ± 64.1 <sup>a</sup>	524.8 ± 67.2 <sup>**</sup>	
		53w	58w	60w	63w	70w	75w	80w	
	0	590.2 ± 61.0	610.0 ± 62.7	615.1 ± 64.8	620.1 ± 67.1	627.4 ± 72.8	637.6 ± 72.8	638.8 ± 76.8	
	0.04	593.3 ± 72.3	606.6 ± 74.0	609.2 ± 74.2	614.0 ± 75.9	620.6 ± 80.3	625.5 ± 82.5	626.7 ± 83.2	
	0.2	595.4 ± 70.0	605.0 ± 70.8	610.9 ± 72.4	617.2 ± 73.7	624.7 ± 74.9	633.5 ± 77.1	640.7 ± 81.6	
	1.0	535.9 ± 70.7 <sup>**</sup>	547.9 ± 72.5 <sup>a</sup>	553.7 ± 74.0 <sup>**</sup>	559.5 ± 75.6 <sup>**</sup>	570.3 ± 80.2 <sup>**</sup>	583.6 ± 77.5 <sup>a</sup>	588.9 ± 76.8 <sup>**</sup>	
		88w	91w	94w	100w	105w			
	0	644.2 ± 80.9	646.3 ± 72.1	646.7 ± 84.4	668.6 ± 80.0	661.6 ± 91.1			
	0.04	627.7 ± 87.8	638.3 ± 70.8	645.2 ± 100.1	662.1 ± 110.7	655.4 ± 113.6			
	0.2	652.8 ± 85.2	657.5 ± 74.1	659.7 ± 82.1	675.3 ± 88.9	674.1 ± 103.5			
	1.0	590.0 ± 77.2 <sup>**</sup>	595.6 ± 54.6 <sup>a</sup>	597.5 ± 73.1 <sup>**</sup>	611.5 ± 81.9 <sup>**</sup>	620.3 ± 78.8 <sup>**</sup>			
	female		0w	1w	2w	3w	4w	5w	6w
		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	213.8 ± 13.4
		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	211.6 ± 14.1
		0.2	107.1 ± 6.5	130.4 ± 8.3	150.6 ± 9.3 <sup>a</sup>	168.8 ± 11.1 <sup>**</sup>	182.2 ± 12.3 <sup>**</sup>	194.3 ± 13.8 <sup>a</sup>	204.9 ± 15.4 <sup>**</sup>
1.0		106.6 ± 5.8	122.7 ± 7.0 <sup>**</sup>	138.0 ± 8.1 <sup>**</sup>	151.5 ± 9.2 <sup>**</sup>	159.2 ± 9.7 <sup>**</sup>	166.7 ± 11.0 <sup>a</sup>	172.9 ± 11.5 <sup>**</sup>	
		7w	8w	9w	10w	11w	12w	16w	
0		224.8 ± 15.6	232.9 ± 16.8	236.7 ± 17.7	240.8 ± 18.2	246.6 ± 19.1	252.1 ± 20.0	267.4 ± 24.8	
0.04		222.9 ± 15.3	230.1 ± 16.6	235.1 ± 17.9	240.5 ± 18.7	245.5 ± 19.4	250.3 ± 20.1	265.9 ± 23.7	
0.2		213.9 ± 16.7 <sup>**</sup>	220.2 ± 18.1 <sup>a</sup>	223.8 ± 18.5 <sup>**</sup>	228.6 ± 19.7 <sup>**</sup>	233.3 ± 20.8 <sup>**</sup>	237.0 ± 21.3 <sup>a</sup>	248.4 ± 22.2 <sup>**</sup>	
1.0		177.6 ± 11.8 <sup>**</sup>	181.8 ± 12.6 <sup>a</sup>	185.5 ± 12.2 <sup>**</sup>	188.6 ± 12.5 <sup>**</sup>	193.1 ± 12.6 <sup>**</sup>	195.5 ± 13.1 <sup>a</sup>	202.2 ± 13.8 <sup>**</sup>	
		21w	25w	29w	34w	38w	42w	47w	
0		281.5 ± 29.6	291.0 ± 32.7	295.8 ± 35.6	306.3 ± 41.9	320.2 ± 46.5	329.1 ± 49.1	345.9 ± 56.8	
0.04		279.6 ± 27.4	287.4 ± 33.7	296.9 ± 38.1	309.3 ± 43.6	322.4 ± 50.3	332.2 ± 52.2	349.7 ± 62.1	
0.2		261.1 ± 24.1 <sup>**</sup>	268.7 ± 27.7 <sup>a</sup>	272.6 ± 29.1 <sup>**</sup>	278.7 ± 31.8 <sup>**</sup>	291.3 ± 36.3 <sup>a</sup>	301.9 ± 40.8 <sup>a</sup>	313.1 ± 45.1 <sup>a</sup>	
1.0		210.5 ± 14.4 <sup>**</sup>	216.0 ± 14.6 <sup>a</sup>	221.2 ± 16.5 <sup>**</sup>	226.6 ± 16.4 <sup>**</sup>	229.5 ± 17.2 <sup>**</sup>	232.8 ± 19.1 <sup>a</sup>	236.8 ± 20.9 <sup>**</sup>	
		53w	58w	60w	63w	70w	75w	80w	
0		373.0 ± 67.6	390.7 ± 70.3	399.5 ± 72.9	409.8 ± 76.4	430.7 ± 82.4	443.3 ± 87.4	453.1 ± 94.4	
0.04		374.8 ± 71.9	387.3 ± 78.1	396.2 ± 80.6	405.2 ± 83.7	422.2 ± 91.6	435.5 ± 84.0	443.4 ± 84.9	
0.2		332.1 ± 52.1 <sup>a</sup>	348.3 ± 55.3 <sup>a</sup>	351.4 ± 73.3 <sup>**</sup>	366.3 ± 59.4 <sup>**</sup>	377.1 ± 68.4 <sup>**</sup>	394.4 ± 72.6 <sup>a</sup>	402.8 ± 75.6 <sup>**</sup>	
1.0		245.3 ± 24.0 <sup>**</sup>	249.7 ± 25.1 <sup>a</sup>	251.8 ± 26.1 <sup>**</sup>	254.1 ± 27.2 <sup>**</sup>	261.9 ± 31.3 <sup>**</sup>	267.2 ± 34.7 <sup>a</sup>	273.0 ± 37.0 <sup>**</sup>	
		88w	91w	94w	100w	105w			
0		473.3 ± 104.1	486.1 ± 78.6	500.4 ± 114.2	496.0 ± 113.0	494.0 ± 119.3			
0.04		457.7 ± 91.4	455.4 ± 83.2	465.6 ± 97.9 <sup>a</sup>	471.4 ± 99.9	474.2 ± 105.7			
0.2		411.2 ± 74.6 <sup>a</sup>	397.7 ± 50.7 <sup>a</sup>	393.3 ± 54.1 <sup>**</sup>	400.8 ± 55.7 <sup>**</sup>	402.8 ± 73.3 <sup>**</sup>			
1.0		281.1 ± 45.3 <sup>**</sup>	284.4 ± 36.5 <sup>a</sup>	288.7 ± 47.6 <sup>**</sup>	291.0 ± 50.8 <sup>**</sup>	294.3 ± 53.2 <sup>**</sup>			

<sup>a</sup>: Mean±SD

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



表12 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13 ラットの平均被験物摂取量(ホコッシ抽出物の発がん性試験)

Sex	Group	Body weight (g)	Mean food consumption (g/day/rat)	Mean daily intake of Hokosshi (mg/day/kg)
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.

表14 血液学的検査(ホコッシ抽出物の発がん性試験)

	Group			
	0.04	0.2	1.0	
<b>Male</b>				
No. of rats examined	32	37	37	36
RBC count ( $10^4/\text{mm}^3$ )	837.3 ± 88.7a	825.3 ± 95.0	848.1 ± 35.5	840.8 ± 52.4
Hb (g/dl)	14.5 ± 1.9	14.4 ± 1.9	15.1 ± 0.7	14.9 ± 1.0
Ht (%)	40.9 ± 5.0	41.0 ± 4.5	42.9 ± 2.0	42.5 ± 2.2
Plt count ( $10^4/\text{mm}^3$ )	88.1 ± 18.6	87.3 ± 23.3	84.1 ± 14.7	82.9 ± 13.6
MCV (fl)	48.8 ± 2.8	49.8 ± 2.1	50.6 ± 2.0**	50.7 ± 2.4**
MCH (pg)	17.2 ± 1.1	17.4 ± 0.9	17.9 ± 0.7**	17.8 ± 0.9*
MCHC (g/dl)	35.2 ± 0.9	35.0 ± 1.3	35.3 ± 0.5	35.1 ± 0.7
WBC count (/ $\text{mm}^3$ )	4240.3 ± 2419.7	4009.7 ± 1931.0	3905.9 ± 2028.3	3445.1 ± 1560.5
No. of rats examined	32	37	37	35
Neutrophils (%)	35.7 ± 13.0	33.7 ± 11.0	28.4 ± 9.8*	32.6 ± 10.6
Lymphocytes (%)	58.7 ± 13.0	61.2 ± 11.8	66.5 ± 10.2*	61.7 ± 12.6
Monocytes (%)	4.2 ± 3.0	3.8 ± 2.8	3.8 ± 2.2	4.1 ± 3.8
Eosinophils (%)	1.3 ± 0.6	1.2 ± 0.8	1.2 ± 0.5	1.6 ± 1.9
Basophils (%)	0.016 ± 0.051	0.059 ± 0.144	0.054 ± 0.117	0.026 ± 0.074
<b>Female</b>				
No. of rats examined	28	30	26	44
RBC count ( $10^4/\text{mm}^3$ )	740.4 ± 110.7	752.0 ± 41.2	749.2 ± 60.4	739.5 ± 50.1
Hb (g/dl)	14.0 ± 1.8	14.3 ± 0.8	14.1 ± 1.1	13.9 ± 0.9
Ht (%)	40.3 ± 4.3	41.1 ± 2.1	40.5 ± 3.0	40.0 ± 2.3
Plt count ( $10^4/\text{mm}^3$ )	72.0 ± 15.3	80.0 ± 16.0	87.7 ± 28.2**	79.6 ± 11.1
MCV (fl)	55.1 ± 5.3	54.7 ± 1.9	54.2 ± 3.6	54.2 ± 1.8
MCH (pg)	19.0 ± 1.1	19.0 ± 0.6	18.8 ± 1.0	18.8 ± 0.6
MCHC (g/dl)	34.6 ± 1.4	34.8 ± 0.7	34.7 ± 0.8	34.7 ± 0.6
WBC count (/ $\text{mm}^3$ )	3781.8 ± 2393.6	3599.0 ± 2575.4	3521.1 ± 1707.3	2893.0 ± 968.5
No. of rats examined	28	30	27	44
Neutrophils (%)	38.2 ± 13.2	37.1 ± 13.2	37.1 ± 13.2	34.0 ± 9.4
Lymphocytes (%)	56.4 ± 13.3	57.4 ± 14.0	57.3 ± 13.8	61.6 ± 9.9
Monocytes (%)	3.8 ± 3.8	3.7 ± 4.5	3.9 ± 3.8	2.6 ± 2.2
Eosinophils (%)	1.7 ± 1.1	1.9 ± 0.9	1.7 ± 0.9	1.8 ± 1.1
Basophils (%)	0.007 ± 0.038	0.003 ± 0.018	0.007 ± 0.038	0.000 ± 0.000

a : Mean±SD

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

表15 血液生化学的検査(ホコッシ抽出物の発がん性試験)

	Group			
	0	0.04	0.2	1.0
<b>Male</b>				
No. of rats examined	32	37	37	36
TP (g/dl)	6.5 ± 0.4a	6.6 ± 0.4	6.7 ± 0.3	6.7 ± 0.3
Alb (g/dl)	4.1 ± 0.4	4.1 ± 0.4	4.3 ± 0.3	4.3 ± 0.2*
A/G	1.7 ± 0.3	1.7 ± 0.3	1.8 ± 0.3	1.8 ± 0.2
GOT (IU/l)	92.7 ± 29.9	90.6 ± 27.2	96.1 ± 37.9	72.5 ± 13.8**
GPT (IU/l)	58.3 ± 32.5	53.8 ± 26.0	59.6 ± 34.0	42.9 ± 17.1*
ALP (IU/l)	413.5 ± 173.6	391.6 ± 155.0	373.9 ± 163.1	389.9 ± 144.4
γ-GTP (IU/l)	2.6 ± 2.6	2.8 ± 1.5	3.4 ± 3.1	3.7 ± 2.1
CRE (mg/dl)	0.4 ± 0.1	0.4 ± 0.2	0.3 ± 0.1	0.3 ± 0.0
BUN (mg/dl)	15.6 ± 3.9	15.8 ± 3.5	15.9 ± 2.4	15.2 ± 2.0
Glu (mg/dl)	143.2 ± 17.5	150.9 ± 12.3	150.3 ± 20.1	143.7 ± 14.8
TG (mg/dl)	296.5 ± 364.0	258.9 ± 170.4	252.1 ± 146.7	241.6 ± 115.3
T-Cho (mg/dl)	156.7 ± 78.3	150.6 ± 45.9	157.7 ± 54.0	119.6 ± 33.4*
Na (mEQ/l)	140.1 ± 2.0	139.8 ± 2.0	140.1 ± 1.5	140.2 ± 1.5
K (mEQ/l)	5.6 ± 0.9	5.8 ± 0.8	5.6 ± 0.8	5.5 ± 0.8
Cl (mEQ/l)	103.5 ± 1.7	103.6 ± 2.1	103.6 ± 1.8	103.6 ± 1.8
Ca (mg/dl)	10.2 ± 0.3	10.3 ± 0.4	10.4 ± 0.3	10.3 ± 0.3
IP (mg/dl)	4.4 ± 0.6	4.3 ± 0.6	4.2 ± 0.6	4.3 ± 0.6
T-Bil (mg/dl)	0.1 ± 0.0	0.1 ± 0.0	0.1 ± 0.0	0.1 ± 0.0
<b>Female</b>				
No. of rats examined	28	30	27	44
TP (g/dl)	6.6 ± 0.6	6.8 ± 0.3	6.9 ± 0.5*	7.0 ± 0.3**
Alb (g/dl)	4.6 ± 0.5	4.7 ± 0.3	4.8 ± 0.2	5.0 ± 0.3**
A/G	2.3 ± 0.5	2.3 ± 0.4	2.3 ± 0.4	2.5 ± 0.4
GOT (IU/l)	88.9 ± 37.4	86.6 ± 32.3	101.6 ± 54.9	86.7 ± 46.2
GPT (IU/l)	39.4 ± 19.8	40.5 ± 15.5	47.2 ± 21.3	38.1 ± 17.0
ALP (IU/l)	208.3 ± 106.3	207.3 ± 107.6	184.7 ± 78.2	208.4 ± 112.4
γ-GTP (IU/l)	2.5 ± 1.2	2.7 ± 1.2	2.4 ± 1.2	2.6 ± 1.1
CRE (mg/dl)	0.3 ± 0.1	0.3 ± 0.0	0.3 ± 0.1	0.3 ± 0.1
BUN (mg/dl)	14.1 ± 3.2	14.9 ± 3.4	14.4 ± 3.3	15.6 ± 2.7
Glu (mg/dl)	128.1 ± 17.1	128.4 ± 13.1	133.9 ± 17.4	134.9 ± 11.4
TG (mg/dl)	433.3 ± 486.3	442.1 ± 266.8	292.9 ± 273.1	280.9 ± 238.8
T-Cho (mg/dl)	119.5 ± 27.7	112.8 ± 24.3	109.0 ± 23.9	74.7 ± 19.6**
Na (mEQ/l)	138.0 ± 2.1	138.0 ± 1.9	138.5 ± 2.0	139.2 ± 1.5*
K (mEQ/l)	5.4 ± 1.0	5.5 ± 0.8	5.6 ± 0.9	5.1 ± 0.9
Cl (mEQ/l)	100.8 ± 2.6	101.4 ± 2.4	101.5 ± 2.0	102.8 ± 2.6**
Ca (mg/dl)	10.3 ± 0.3	10.3 ± 0.3	10.3 ± 0.3	10.3 ± 0.3
IP (mg/dl)	4.2 ± 0.8	4.1 ± 0.5	4.0 ± 0.8	3.8 ± 0.8
T-Bil (mg/dl)	0.1 ± 0.0	0.1 ± 0.0	0.1 ± 0.0	0.1 ± 0.0

a : Mean±SD

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

表16 ラット血漿のestradiol, progesterone及びtestosteroneの濃度

Sex	Group	Rat No.	Estradiol (pg/mL)	Progesterone (ng/mL)	Testosterone (ng/mL)
Male	Control (Mean±S.D.)	5	<10.0	8.67 ± 3.16	0.27 ± 0.20
	Treatment 1% (Mean±S.D.)	5	<10.0	4.60 ± 3.84	0.77 ± 0.45
Female	Control (Mean±S.D.)	5	17.6 ± 7.5	38.81 ± 15.43	<0.05
	Treatment 1% (Mean±S.D.)	5	12.5 ± 8.0	23.35 ± 12.01	<0.05

表17 ラット血漿の甲状腺ホルモンT<sub>3</sub>、T<sub>4</sub>及び甲状腺刺激ホルモンTSH濃度の変動

Group	Rat No.	T <sub>3</sub> (ng/mL)	T <sub>4</sub> (μ/dL)	TSH (ng/mL)
Control (Mean±S.D.)	10	90.0 ± 27.8	1.62 ± 0.35	5.58 ± 1.43
Low-iodine (Mean±S.D.)	10	62.5 ± 45.2	<1.00	44.74 ± 26.56
Damaged thyroid Control (Mean±S.D.)	7	89.1 ± 17.7	2.15 ± 0.60	13.65 ± 8.85
Damaged thyroid Low-iodine (Mean±S.D.)	10	65.7 ± 25.9	<1.00	76.94 ± 58.88

表18 各実験群におけるラット血漿のT<sub>3</sub>, T<sub>4</sub>及びTSHの濃度

Sex	Group	Rat No.	T <sub>3</sub> (ng/mL)	T <sub>4</sub> (μg/dL)	TSH (ng/mL)
Male	Control (Mean±S.D.)	6	0.93 ± 0.29	3.57 ± 1.08	7.88 ± 1.45
	Treatment 0.04% (Mean±S.D.)	6	1.02 ± 0.37	3.18 ± 0.73	15.17 ± 7.43
	Treatment 0.2% (Mean±S.D.)	6	0.87 ± 0.19	2.79 ± 0.52	9.80 ± 2.44
	Treatment 1% (Mean±S.D.)	6	1.00 ± 0.20	3.56 ± 0.66	9.64 ± 1.47
Female	Control (Mean±S.D.)	6	0.81 ± 0.14	2.64 ± 0.75	7.64 ± 3.69
	Treatment 0.04% (Mean±S.D.)	7	0.97 ± 0.10	2.33 ± 0.50	7.67 ± 1.18
	Treatment 0.2% (Mean±S.D.)	6	1.00 ± 0.22	2.72 ± 0.98	8.08 ± 2.25
	Treatment 1% (Mean±S.D.)	6	0.88 ± 0.16	2.51 ± 0.45	7.63 ± 1.00

表19 尿検査(ホコツシ抽出物の発がん性試験)

Sex	Group	WBC			Urobilinogen			Protein			pH										Occult blood			Specific gravity										Ketone body			Glucose							
		-	±	1+	2+	3+	0	1	2	-	±	1+	2+	3+	4+	5.0	6.0	6.5	7.0	7.5	8.0	8.5	-	±	1+	2+	3+	1.000	1.006	1.010	1.016	1.020	1.026	1.030	-	±	1+	2+	-	1+	2+			
Male	0	No. of animals		27	31			29			27										26			24										23			22							
		9	4	3	10	1	31	0	0	0	3	7	12	7	0	0	5	6	9	6	1	0	6	6	3	4	2	5	0	0	4	2	4	8	6	20	3	0	0	21	0	1		
		No. of animals		30	29			30			30										29			27										27			27							
	0.04	No. of animals		24	9	15	0	29	0	0	2	2	8	11	7	0	2	4	8	7	5	3	1	12	3	5	3	2	4	0	0	2	3	4	13	5	23	2	2	0	27	0	0	
		No. of animals		30	31			30			29										29			27										26			25							
		10	1	6	12	1	31	0	0	1	4	8	9	7	1	1	7	4	7	8	2	0	8	3	1	8	5	4	0	0	0	5	8	8	6	25	1	0	0	25	0	0		
	0.2	No. of animals		26	32			31			28										26			23										22			22							
		6	8	5	6	1	31	1	0	0	8	5	8	10	0	2	5	1	11	4	5	0	13	1	0	5	2	5	0	1	3	0	5	8	6	17	3	1	1	21	0	1		
		No. of animals		8	7			7			6										6			6										6			6							
	Female	0	No. of animals		2	4	1	1	0	7	0	0	2	1	2	1	1	0	1	1	0	3	0	0	1	2	1	0	0	1	2	0	0	3	0	0	1	2	6	0	0	6	0	0
			No. of animals		9	8			8			7										6			6										6			6						
			1	3	3	2	0	8	0	0	0	2	4	1	1	0	0	1	0	2	2	2	0	1	1	2	1	1	0	0	0	1	1	2	2	0	6	0	0	6	0	0		
0.04	No. of animals		7	7			7			7										6			6										6			6								
	2	2	1	2	0	7	0	0	3	0	3	0	1	0	0	2	3	1	1	0	0	1	1	0	1	0	3	0	0	0	0	1	3	2	6	0	0	6	0	0				
	No. of animals		8	8			7			6										6			6										5			5								
0.2	No. of animals		5	3	0	0	8	0	0	4	3	0	0	0	0	1	1	1	0	2	1	0	1	2	1	1	0	1	0	0	1	1	1	1	2	5	0	0	5	0	0			
	No. of animals		8	8			7			6										6			6										5			5								
	5	3	0	0	0	8	0	0	4	3	0	0	0	0	1	1	1	0	2	1	0	1	2	1	1	0	1	0	0	1	1	1	1	2	5	0	0	5	0	0				
1	No. of animals		8	8			7			6										6			6										5			5								
	5	3	0	0	0	8	0	0	4	3	0	0	0	0	1	1	1	0	2	1	0	1	2	1	1	0	1	0	0	1	1	1	1	2	5	0	0	5	0	0				
	No. of animals		8	8			7			6										6			6										5			5								

表20 雄ラットの臓器重量(ホコッシ抽出物の発がん性試験)

Male	Dose level (%)			
	0	0.04	0.2	1
No. of Animals	34 <sup>a</sup>	38	37	37
Body weight (g)	661.6 ± 91.1 <sup>b</sup>	652.4 ± 113.6	674.1 ± 103.5	620.3 ± 78.8
Organs				
Brain	2.06 ± 0.12	2.06 ± 0.10	2.04 ± 0.12	2.04 ± 0.13
Thymus	0.54 ± 0.28	0.46 ± 0.19	1.00 ± 2.18	0.50 ± 0.38
Heart	1.49 ± 0.24	1.62 ± 0.67	1.42 ± 0.18	1.43 ± 0.33
Lung	1.93 ± 0.80	1.67 ± 0.31*	1.64 ± 0.23*	1.62 ± 0.28**
Liver	18.32 ± 5.13	17.21 ± 3.06	17.40 ± 3.12	16.01 ± 2.40*
Spleen	1.27 ± 0.30	1.40 ± 0.51	1.20 ± 0.24	1.18 ± 0.20
Kidney	2.98 ± 0.52	3.15 ± 1.11	3.50 ± 2.45	2.81 ± 0.40
Testis	4.70 ± 3.76	3.34 ± 1.04*	4.52 ± 2.75	3.85 ± 1.12
Adrenal	0.09 ± 0.04	0.08 ± 0.02	0.09 ± 0.05	0.12 ± 0.26

a: Numbers in parenthesis represent the number of samples examined

b: Values are mean±S.D.

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

表21 雌ラットの臓器重量(ホコッシ抽出物の発がん性試験)

Female	Dose level (%)			
	0	0.04	0.2	1
No. of Animals	28 <sup>a</sup>	31	27	44
Body weight (g)	494.0 ± 119.3 <sup>b</sup>	474.2 ± 105.7	402.8 ± 73.3*	294.3 ± 53.2**
Organs				
Brain	1.91 ± 0.16	1.90 ± 0.12	1.89 ± 0.11	1.88 ± 0.10
Thymus	0.38 ± 0.20	0.65 ± 1.59	0.52 ± 0.89	0.30 ± 0.27
Heart	1.09 ± 0.17	1.08 ± 0.16	1.01 ± 0.16	0.83 ± 0.08**
Lung	1.32 ± 0.16	1.25 ± 0.18	1.24 ± 0.16*	1.07 ± 0.13**
Liver	12.35 ± 3.38	11.74 ± 2.51	10.29 ± 2.70**	7.96 ± 1.37**
Spleen	1.00 ± 0.43	0.88 ± 0.17	0.75 ± 0.29**	0.61 ± 0.12**
Kidney	2.28 ± 0.46	2.16 ± 0.36	2.00 ± 0.43**	1.68 ± 0.19**
Ovary	0.23 ± 0.12	0.24 ± 0.11	0.29 ± 0.24	0.19 ± 0.08
Uterus	1.05 ± 0.41	0.91 ± 0.37	1.37 ± 2.13	1.25 ± 0.76
Adrenal	0.09 ± 0.02	0.08 ± 0.02	0.08 ± 0.03*	0.07 ± 0.02**

a: Numbers in parenthesis represent the number of samples examined

b: Values are mean±S.D.

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

表22 雄ラットの相対的臓器重量比(ホコッシ抽出物の発がん性試験)

Male	Dose level (%)			
	0	0.04	0.2	1
No. of animals	34 <sup>a</sup>	38	37	37
Organs				
Brain	3.17 ± 0.49 <sup>b</sup>	3.27 ± 0.69	3.09 ± 0.46	3.35 ± 0.47
Thymus	0.81 ± 0.39	0.70 ± 0.25	1.64 ± 4.37	0.80 ± 0.53
Heart	2.26 ± 0.31	2.59 ± 1.25	2.14 ± 0.25	2.31 ± 0.44
Lung	3.07 ± 1.89	2.64 ± 0.67	2.47 ± 0.37*	2.65 ± 0.48
Liver	27.60 ± 6.96	26.60 ± 3.50	25.89 ± 3.40	25.84 ± 2.66
Spleen	1.92 ± 0.47	2.20 ± 0.92	1.81 ± 0.34	1.90 ± 0.28
Kidney	4.54 ± 0.76	4.97 ± 2.11	5.35 ± 4.20	4.57 ± 0.63
Testis	7.34 ± 6.31	5.27 ± 1.58	7.04 ± 4.94	6.26 ± 1.92
Adrenal	0.14 ± 0.06	0.13 ± 0.05	0.13 ± 0.08	0.20 ± 0.44

a: Numbers in parenthesis represent the number of samples examined

b: Relative organ weight was calculated as follows: (organ weight/ body weight)×1000. Value are means ±S.D..

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

表23 雌ラットの相対的臓器重量比(ホコッシ抽出物の発がん性試験)

Female	Dose level (%)			
	0	0.04	0.2	1
No. of animals	28 <sup>a</sup>	31	27	44
Organs				
Brain	4.10 ± 1.11 <sup>b</sup>	4.23 ± 0.94	4.83 ± 0.10*	6.56 ± 1.07**
Thymus	0.83 ± 0.62	1.43 ± 3.52	1.22 ± 1.91	1.04 ± 0.94
Heart	2.26 ± 0.29	2.33 ± 0.38	2.54 ± 0.28**	2.89 ± 0.38**
Lung	2.80 ± 0.60	2.71 ± 0.43	3.16 ± 0.69*	3.72 ± 0.60**
Liver	25.02 ± 3.88	24.99 ± 3.21	25.58 ± 3.49	27.33 ± 4.03*
Spleen	2.08 ± 0.93	1.90 ± 0.34	1.91 ± 0.47	2.10 ± 0.46
Kidney	4.79 ± 1.16	4.69 ± 0.87	5.00 ± 0.74	5.82 ± 0.90**
Ovary	0.49 ± 0.29	0.54 ± 0.27	0.73 ± 0.55*	0.65 ± 0.22
Uterus	2.32 ± 1.29	2.00 ± 0.91	3.40 ± 4.86	4.41 ± 2.84**
Adrenal	0.19 ± 0.05	0.17 ± 0.05	0.20 ± 0.06	0.24 ± 0.06**

a: Numbers in parenthesis represent the number of samples examined



表24-1 実験途中で死亡又は剖検したラットの病理学的所見 I (ホコッシ抽出物の発がん性試験)

Organ	Finding	Male				Female			
		0% (n=16)	0.04% (n=12)	0.20% (n=13)	1% (n=13)	0% (n=22)	0.04% (n=19)	0.20% (n=23)	1% (n=6)
Brain	brain neoplasm	4		1		1			
	astrocytoma	1							
	calcification					1			
	atrophy	1						1	
	hemangioma					1			
Eye	calaract						1		
Thymus	thymic lymphoma		1	1	2		1	2	
	atrophy	5	1	2		1			
	bleeding			1					
	squamous cell metastasis					1			
Lymph node	metastasis of neoplasm			1				1	
	cyst						1		
	hemosiderin deposition							2	
Heart	schwanoma	1							
	atrophy	2	3	1	1				
	thrombosis				1				
	necrosis				1				
	fibrosis						2		
	cell infiltration		1	1	1			1	
Lung	adenoma								1
	bleeding					1			
	metastasis of neoplasm		1		1				
Liver	hepatoma					1			
	metastasis of neoplasm		1		2			1	
	foci	3	1	1	3	1	1	1	1
	bile duct hyperplasia	8	2	5	3	9	11	8	2
	fatty liver	2	4	4	1	7	11	11	1
	cell infiltration		1	3	3	4	1	3	
	hemosiderin deposition					1			
	congestion							1	
Spleen	non-thymic lymphoma				1				
	metastasis of neoplasm			1	1				
	bleeding							2	
Stomach	squamous cell carcinoma	1							
	papilloma		3	1		1	1	3	
	squamous cell metaplasia		1						
	ulcer					1	3	1	
	edema		2	1	1		2	3	
	cell infiltration	1		1					
	atrophy of parietal cell		1					2	
Kidney	mesenchymal tumor		1						
	adenocarcinoma		1						
	sarcoma		1						
	squamous cell carcinoma		1						
	papilloma			1					
	squamous cell metaplasia	1	1	1		5	2	3	2
	metastasis of neoplasm			1	1				
	sclerosis	1	1	1	1				2
	hydronephrosis					1	1	1	
	cast	8	4	5	5	13	7	5	
	regenerative epithelium	6	4	4		4	2	1	
	cell infiltration	4	2	2	1	3	3		
	calcification				1	12	3	8	2
	cyst					1	2		
	bleeding				1				
necrosis					1				

表24-2 実験途中で死亡又は剖検したラットの病理学的所見 II (ホコッシ抽出物の発がん性試験)

Organ	Finding	Male				Female			
		0% (n=16)	0.04% (n=12)	0.20% (n=13)	1% (n=13)	0% (n=22)	0.04% (n=19)	0.20% (n=23)	1% (n=6)
Adrenal	adenoma			1					
	bleeding				1	8	8	9	4
	calcification					1			
	cell infiltration						1		
	sclerosis							1	
	fibrinoid deposit							1	
Pituitary	pituitary tumor	4	4	7	10	20	15	19	6
Thyroid and Parathyroid	c-cell tumor					2	3	1	
	follicular tumor	1	1	2	2	1	1		
	papillary tumor				1			2	
	goita	1	2	2	1		1	1	
	hyperplasia	1							
	atrophy	1							
Mammary gland	parathyroid tumor		2						
	adenocarcinoma	1				1	2	4	
	adenoma					4	2		
	fibroadenoma					7	5	7	1
	papilloma					1			
	squamous cell metaplasia							1	
	ulcer					1			
milk secretion					5	5	4	1	
Pancreas	islet tumor	2			1				
	metastasis of neoplasm			1					
	islet hyperplasia	1	1		1				
	acinar cell fatty degeneration	4	5	8	6	12	13	14	4
acinar cell atrophy					1	1			
Abdominal, Subcutis, Skin and Others	sarcoma	3	3	2					
	osteosarcoma					1			
	squamous cell carcinoma	1	2						
	duodenum adenocarcinoma		1						
lipoma	1		4	1		1			
Male Only Prostate	ventral prostate tumor	2							
	seminal vesicle tumor		1						
	seminal vesicle hyperplasia	3							
	fibrosis			1					
cell infiltration				2					
Testis	seminoma	1	2	1					
	seminiferous tubule atrophy	4	2	7	2				
	seminiferous tubule vacuolar		1						
Female Only Uterus	adenocarcinoma							1	
	hyperplasia					2	1	2	2
	squamous cell metaplasia					1			
	stromal fibrosis					1			
	fibrosis						1	1	
	cyst					6	3	6	4
Ovary	atrophy					1			

表25-1 各実験群に認められた病理学的所見 I (ホコッソ抽出物の発がん性試験)

Organ	Finding	Male				Female				
		0% (n=34)	0.04% (n=38)	0.20% (n=37)	1% (n=37)	0% (n=28)	0.04% (n=31)	0.20% (n=27)	1% (n=44)	
Brain	brain neoplasm			1	1				1	
	atrophy	+				1				
	bleeding	+		1						
Eye	cataract						1			
Thymus	thymic lymphoma		1	2	2	1	2	2	4	
	cyst					2				
	hyperplasia	+				1				
	atrophy	+	11	11	2	1			1	
	hemosiderin deposition	+						2	1	
Lymph node	non-thymic lymphoma						1			
	cyst		1	1	1					
	metastasis of neoplasm	+	1	1						
	hyperplasia	+					1			
	hemosiderin deposition	+						1		
	fibrosis	+		1	1					
	fatty degeneration	+						1		
Heart	schwanoma			2						
	atrophy	±								
		+	16	14	8					
	necrosis	+							2	
	thrombosis	+	1	1		1				
	fibrosis	+						2		
	cell infiltration	±				2				
	+	1	1	2	3		2	2		
Lung	adenoma		2			1				
	squamous cell carcinoma				1					
	papilloma						1			
	metastasis of neoplasm	+	1			1				
	cell infiltration	±					1			
Liver	hepatoma		4						1	
	glioma					1				
	cyst			1	1		2			
	metastasis of neoplasm	+		1		1				
	foci	+	24	26	20	26	4	4	1	6
		++			1	1	4	4	1	6
	bile duct hyperplasia	±	2	3	4	4	4	3	2	6
		+	19	17	15	8	12	17	17	18
				2				2		
	fatty liver	±		1	2	3	1			
		+	4	5	2	3	1	4	2	1
cell infiltration	±	2	2	4	5	4	1		2	
	+	1	6	5	5	2	1	5	4	
	bile duct enlargement	+		3					1	
Spleen	non-thymic lymphoma		1	2					1	
	hyperplasia	+					2			
	congestion	+					1			
	bleeding	+		1						
Stomach	papilloma		1	2						
	sarcoma		1	2						
	cyst								1	
	metastasis of sarcoma	+	1							
	ulcer	+			1	1				
	edema	+	1	2						
	cell infiltration	+	3		2					
	atrophy	+						1		
Kidney	sarcoma						1			
	squamous cell carcinoma		1							
	cyst		2	5	1	1	2	1	1	1
	squamous cell metaplasia	+	4	2	1	2	5	6	4	6
	sclerosis	+	3	5	5		1	1		
	hydronephrosis	+	1	1			1		1	4
	cast	±	1	2	8	1		4	1	6
		+	21	15	17	20	12	8	10	12
	regenerative epithelium	+	17	20	21	20	3	3	4	
	cell infiltration	±	1	4	3	1	1			
		+	21	15	11	7	5	1	4	2
		calcification	+					12	13	12

±; minimal, +; mild, ++; moderate

表25-2 各実験群に認められた病理学的所見Ⅱ(ホコッシ抽出物の発がん性試験)

Organ	Finding	Male				Female				
		0% (n=34)	0.04% (n=38)	0.20% (n=37)	1% (n=37)	0% (n=28)	0.04% (n=31)	0.20% (n=27)	1% (n=44)	
Adrenal	adenoma	2		2				1	1	
	cyst					1				
	fatty degeneration	+	1							
Bladder	papilloma						1			
	hyperplasia	+			1					
Pituitary	pituitary tumor	3	2	4	8	18	18	19	25	
Thyroid	c-cell tumor	4	5	3	7	5	6	3	6	
	follicular tumor	2	1	2	1	1	1		2	
	papillary tumor	2				1	1		1	
	cyst					1				
	goita	+	1	2	2	4			2	
	atrophy	+	1	1						
	fibrosis	+							1	
Mammary gland	adenocarcinoma						1			
	adenoma					2				
	fibroadenoma					6	8	3		
	squamous cell metaplasia	+				1				
	milk secretion	+				5	2	2	2	
Pancreas	islet tumor	5	3	2	2	2	1	3		
	metastasis of neoplasm	+				1				
	islet hyperplasia	+	1	1						
	acinar cell fatty degeneration	±					2		6	
		±	23	27	29	26	24	23	24	24
		++		1						
	acinar cell atrophy	+		1	1	1	1		1	
Abdominal, Subcutis, Skin and Others	adenoma				1			1		
	lipoma	6	5	5	3				3	
	sarcoma	5	2	1	3		1			
	squamous cell carcinoma	1								
	papilloma	1			1					
	mesothelioma	2								
	epididymis tumor		1							
	hemangioma			1						
<b>Male Only</b>										
Prostate	ventral prostate tumor	1		1						
	seminal vesicle tumor	4	6	2	1					
	seminal vesicle hyperplasia	16	6							
	fibrosis	+			1					
	cell infiltration	±			1					
	bleeding	+			2					
	+			1						
Testis	seminoma	2	3	5	2					
	semiferous tubule atrophy	+	16	14	15	14				
	semiferous tubule vacuolar	+			1	1				
<b>Female Only</b>										
Uterus	adenocarcinoma								1	
	adenomatous polyp							1	3	
	sarcoma					1		1		
	cyst					18	14	12	23	
	hyperplasia	+				3	4	4	7	
	metastasis of neoplasm	+				1				
	squamous cell metaplasia	+						1		
	stromal fibrosis	+				1				
	fibrosis	+					2	7	5	
Ovary	atrophy	+				1				
	cyst	+							1	

±; minimal, +; mild, ++; moderate