

られた。病理組織学的検査では、肝細胞肥大が雄の 500ppm 以上の群及び雌の 5000ppm 群で、変異肝細胞巢の発現頻度（動物数）と大きさの増加が雄の 5000ppm 群で認められた。また、慢性進行性腎症、甲状腺濾胞細胞の瀰漫性過形成が雌雄の 5000ppm 群で、脾臓の赤芽球系の髄外造血の軽微な亢進が雄の 5000ppm 群で観察された。なお、33 週で切迫解剖した動物では腎臓に腎芽腫が認められた。51 週で死亡した 5000ppm 群の雌では、副腎に褐色細胞腫が観察され、被膜外への浸潤及び肺への遠隔転移も認められることより悪性と判断された。

以上のことから、ジャマイカカシヤ抽出物の無毒性量（NOAEL）は、雄では肝臓の重量及び病理組織学的変化を、雌では尿タンパク質の増加を指標に雌雄ともに 50ppm（雄で 2.1 ± 0.6 mg/kg/day、雌で 2.5 ± 0.6 mg/kg/day）と推定した。また、変異肝細胞巢の発現頻度（動物数）と大きさの増加が雄の 5000ppm 群で認められたことより、大量投与による肝臓への発がん促進作用の可能性が示唆された。

4) 1 年間反復投与毒性/発がん性併用試験では、試験開始直後に入手先のラット飼育生産施設でラットの肺パスツレラ (*Pasteurella pneumotropica*) 感染の発生が明らかとなった。そのため本試験を途中で中止し、ラットおよび施設での上記の病原体陰性を確認後、試験を再開することとした。このため、実験の遅れを余儀なくされた。

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(2007)

F. 健康危機情報

ホコッシ抽出物の大量投与により雄ラットでは下垂体腫瘍の発症が促進される可能性が示唆された。

ジャマイカカシヤ抽出物の比較的大量投与により肝臓、腎臓などへの影響が示唆された。また大量投与による肝臓への発がん促進作用の可能性が示唆された。

G. 研究発表

なし

H. 知的財産権の出願・登録状況

1. 特許取得：なし
2. 実用新案特許：なし
3. その他

図1 ホコッシ抽出物の予備試験 16週間反復投与毒性試験

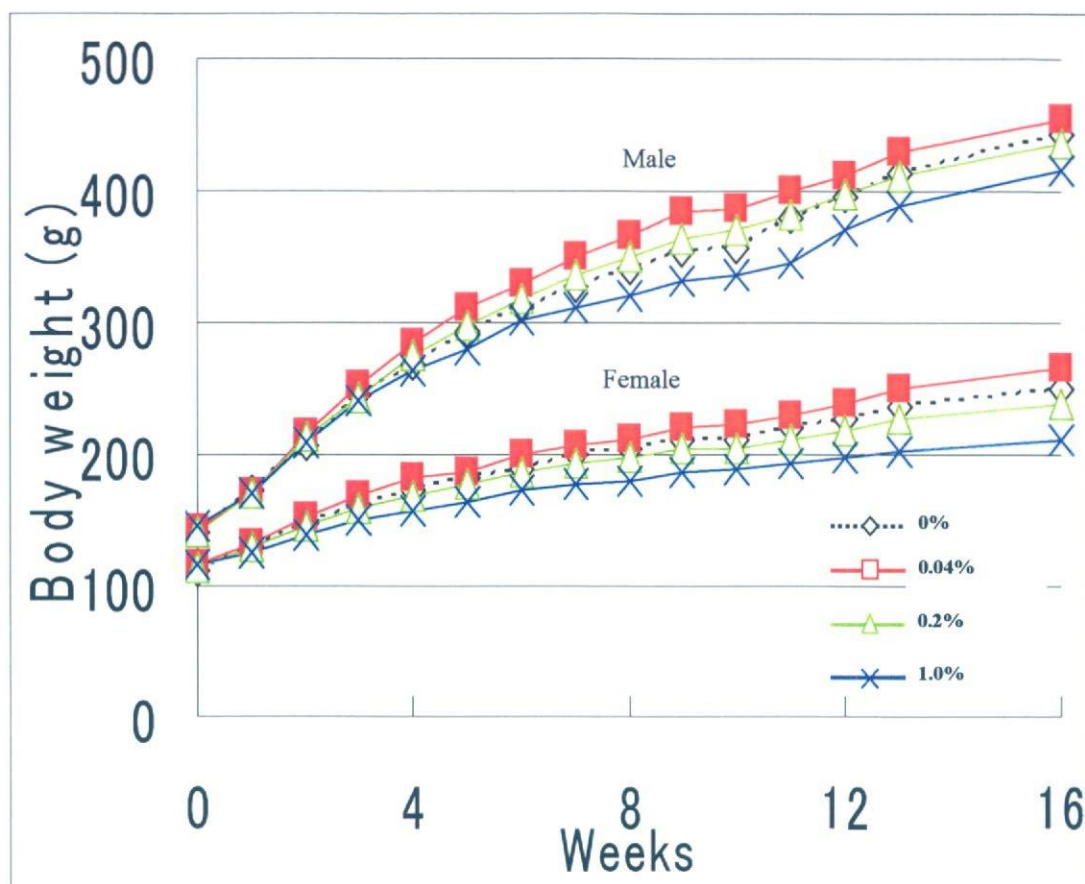


図2 ラット体重の推移(ホコッシ抽出物の1年間反復投与毒性試験)

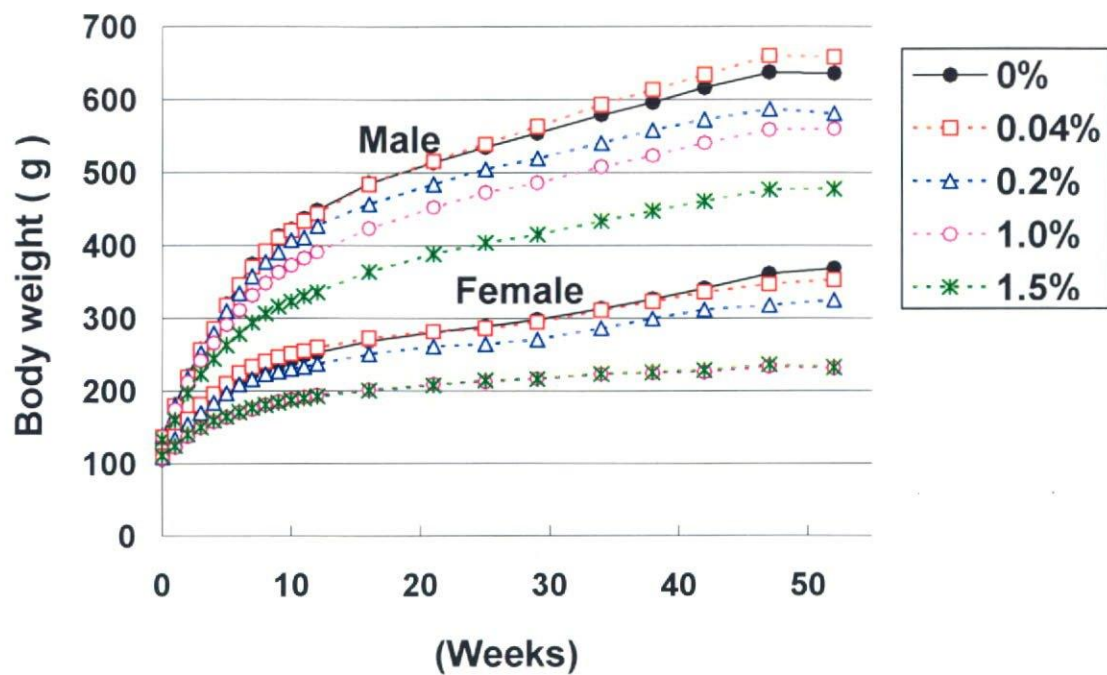


表3 ラット体重の推移(ホコッソ抽出物の1年間反復投与毒性試験)

Sex	Group	Weeks					
		0w	1w	2w	3w	4w	5w
Male	0	137.4 ± 9.3 ^a	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 ^a	290.9 ± 29.6 ^{**}
	1.5	132.6 ± 7.7	159.8 ± 9.6 ^{**}	196.3 ± 10.6 [*]	222.8 ± 11.9 ^a	244.2 ± 12.6 ^a	262.8 ± 14.7 ^{**}
		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 ^a	331.6 ± 35.9 ^a	348.0 ± 39.4 [*]	362.9 ± 41.8 ^a	372.8 ± 42.8 ^a	382.1 ± 44.0 ^{**}
	1.5	278.2 ± 15.6 ^a	293.9 ± 16.4 ^a	306.2 ± 17.5 [*]	315.9 ± 17.6 ^a	322.5 ± 18.8 ^a	330.2 ± 19.4 ^{**}
		12w	16w	21w	25w	29w	34w
	0	448.2 ± 40.3	485.4 ± 46.8	513.9 ± 46.9 ^a	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 ^a	422.4 ± 49.6 ^a	452.0 ± 56.6 [*]	472.4 ± 62.9 ^a	485.8 ± 70.4 ^a	507.4 ± 78.2 [*]
	1.5	335.4 ± 20.6 ^a	363.4 ± 23.3 ^a	387.9 ± 25.5 ^{**}	403.4 ± 27.2 ^a	414.8 ± 29.8 ^a	433.1 ± 32.1 ^{**}
		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 ^a	540.3 ± 88.7 ^a	558.4 ± 93.3 [*]	559.0 ± 93.7 [*]			
1.5	447.2 ± 33.1 ^a	460.8 ± 34.2 ^a	476.5 ± 36.3 [*]	477.3 ± 37.8 ^{**}			
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 ^{**}	137.0 ± 7.5 ^{**}	148.7 ± 7.5 ^{**}	157.0 ± 9.4 ^{**}	163.3 ± 9.7 ^{**}
	1.5	110.6 ± 5.2	124.0 ± 6.6 [*]	140.0 ± 8.5 ^{**}	150.0 ± 9.9 ^{**}	159.2 ± 10.2 ^a	164.1 ± 11.8 ^{**}
		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 [*]
	1.0	170.5 ± 11.2 ^a	174.8 ± 10.3 ^a	180.4 ± 12.0 [*]	184.8 ± 12.5 ^a	188.3 ± 10.5 ^a	190.9 ± 12.0 ^{**}
	1.5	171.0 ± 13.3 ^a	176.2 ± 12.9 ^a	180.7 ± 13.9 [*]	183.2 ± 14.3 ^a	186.6 ± 12.9 ^a	189.4 ± 13.0 ^{**}
		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 ^a	250.1 ± 22.6 ^a	260.9 ± 26.9 [*]	264.0 ± 31.2 ^a	270.5 ± 32.8 ^a	285.6 ± 38.9 [*]
	1.0	194.3 ± 9.9 ^{**}	200.7 ± 11.9 ^a	208.4 ± 13.3 [*]	212.3 ± 14.7 ^a	216.4 ± 13.7 ^a	222.6 ± 15.1 ^{**}
	1.5	192.0 ± 14.0 ^a	200.4 ± 14.4 ^a	207.4 ± 15.2 [*]	214.4 ± 13.7 ^a	215.8 ± 15.6 ^a	223.4 ± 18.6 ^{**}
		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 ^a	311.2 ± 55.5 ^a	317.7 ± 59.0 [*]	324.7 ± 67.1 [*]			
1.0	223.8 ± 13.5 ^a	225.7 ± 15.2 ^a	233.3 ± 13.8 [*]	230.6 ± 15.4 ^{**}			
1.5	225.2 ± 16.4 ^a	227.7 ± 16.5 ^a	236.0 ± 17.9 [*]	232.3 ± 20.2 ^{**}			

^a: Mean±SD

^{*}, ^{**}: 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 ^a	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 [*]	17.40 ± 0.51 [*]	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 [*]	16.61 ± 0.51 [*]	15.69 ± 0.54 [*]	20.89 ± 0.67	18.84 ± 0.48 [*]
	1.5	13.29 ± 2.76	15.77 ± 0.79	15.88 ± 0.47 [*]	15.66 ± 0.80 [*]	14.24 ± 0.53 [*]	19.00 ± 2.07 [*]	16.93 ± 0.62 ^{**}
		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 [*]	18.89 ± 1.07 [*]	18.25 ± 0.99 [*]	17.88 ± 0.54 [*]	17.96 ± 0.28 [*]	18.28 ± 0.26 [*]	17.86 ± 0.48
	1.5	17.42 ± 0.77 [*]	17.08 ± 0.61 [*]	16.56 ± 0.45 [*]	16.67 ± 1.10 [*]	16.61 ± 1.12 [*]	16.66 ± 0.41 [*]	16.15 ± 0.35 ^{**}
		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 [*]
	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 [*]	15.81 ± 1.87	16.18 ± 0.56 [*]	16.68 ± 0.51 [*]	16.84 ± 0.41 [*]	16.97 ± 0.34 [*]	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 [*]	10.96 ± 1.05 [*]	10.39 ± 2.26	14.37 ± 2.12	10.91 ± 2.33 [*]
	1.5	12.44 ± 4.11	11.18 ± 0.97	11.24 ± 0.50 [*]	9.91 ± 1.05 [*]	8.45 ± 1.18 [*]	11.93 ± 1.49 [*]	10.28 ± 0.88 ^{**}
		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 [*]	11.23 ± 0.11 [*]	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 [*]	10.86 ± 0.93 [*]	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 [*]	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 [*]	12.62 ± 1.58	14.81 ± 1.11	

^a: Mean ± SD

^{*}, ^{**}: 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 ^a	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 [*]	17.92 ± 1.93 [*]	405.28 ± 93.02
	1.5	477.3 ± 37.8 ^{**}	16.46 ± 1.74 ^{**}	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 [*]	12.54 ± 1.70	97.48 ± 15.41
	1.0	230.6 ± 15.4 ^{**}	11.58 ± 1.64 ^{**}	572.61 ± 92.35
	1.5	232.3 ± 20.2 ^{**}	11.93 ± 2.63 [*]	875.32 ± 170.16

^a: Mean ± SD

^{*}, ^{**}: 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(ホコッソ抽出物の1年間反復投与毒性試験)

	Group				
	0	0.04	0.2	1	1.5
Male					
No. of rats examined	12	11	12	12	23
RBC count($10^4/\text{mm}^3$)	866.7 ^a ± 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(/ 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					
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
Female					
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(/ 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					
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

^a: 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
Male					
No. of rats examined	12	11	12	12	24
TP(g/dl)	6.8 ± 0.3 ^a	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
Female					
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

^a: 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 ^a	11	12	12	24
	B.W. (g)	635.4 ± 63.4 ^b	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 ^a	12	12	12	24
	B.W. (g)	368.8 ± 69.0 ^b	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

^a: Numbers in parenthesis represent the number of samples examined

^b: Mean ± SD

*,** : Significantly different from the untreated control value at he 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 ^a	11	12	12	24
	Organs					
	Brain	3.18 ± 0.40 ^b	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 ^a	12	12	12	24
	Organs					
	Brain	5.16 ± 0.10 ^b	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

^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 different from the untreated control value at he 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)

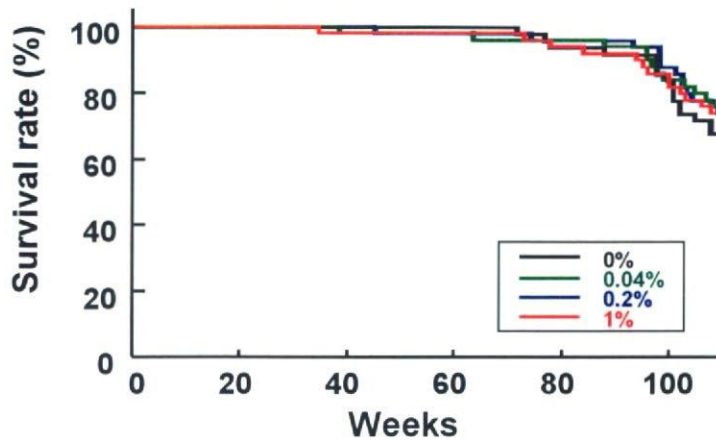


図4 雌ラットの生存曲線(ホコッシ抽出物の発がん性試験)

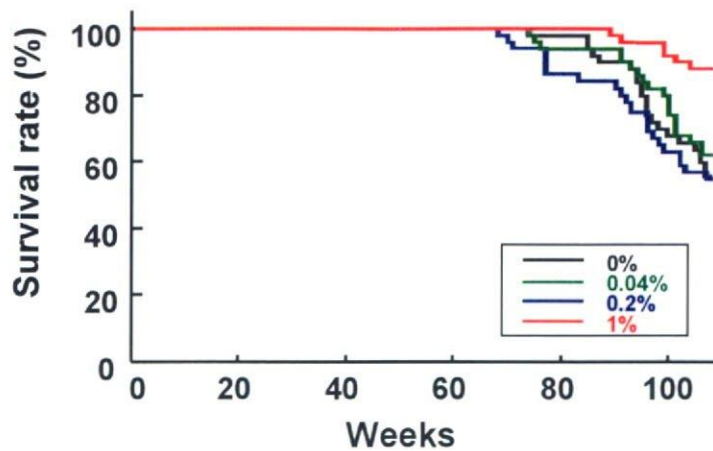


図5 ラット体重の推移(ホコッシ抽出物の発がん性試験)

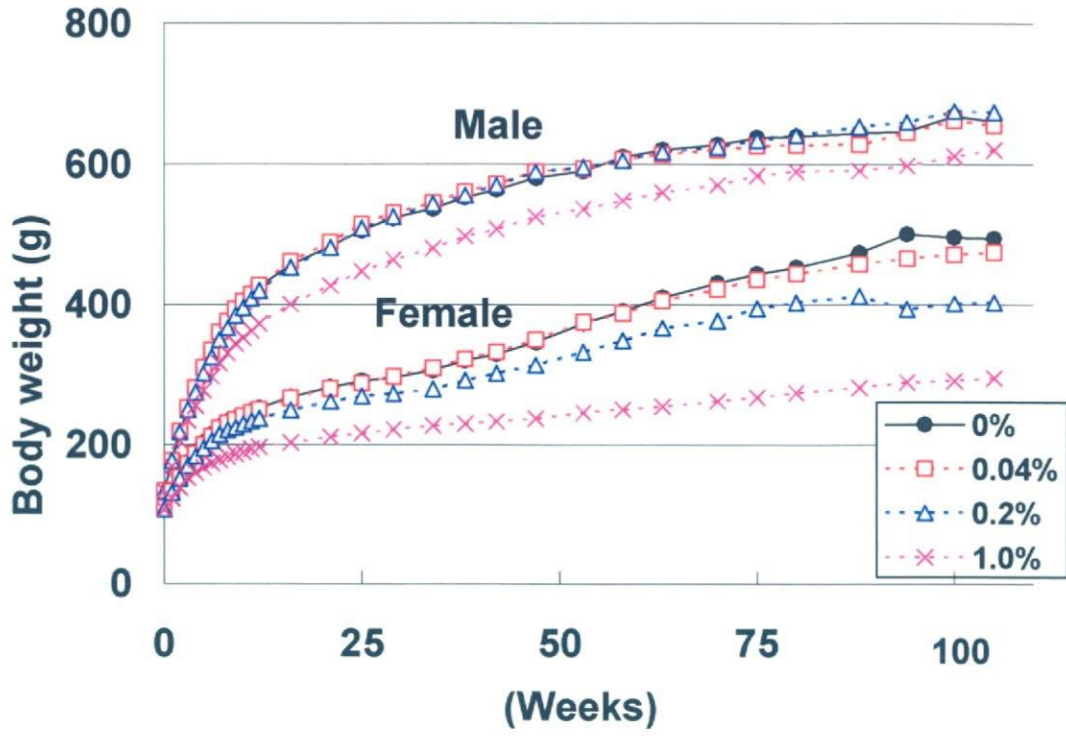


表11 ラット体重の推移(ホコッソ抽出物の発がん性試験)

Sex	Group	Weeks						
		0w	1w	2w	3w	4w	5w	6w
male	0	133.5 ± 9.8 ^a	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 ^a	204.8 ± 13.6 ^{**}	234.1 ± 16.5 ^{**}	255.6 ± 18.4 ^{**}	276.5 ± 21.6 ^a	296.5 ± 24.5 ^{**}
		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 ^{**}	330.0 ± 29.2 ^a	343.8 ± 31.5 ^{**}	352.1 ± 32.4 ^{**}	361.8 ± 33.8 ^{**}	372.4 ± 35.5 ^a	400.0 ± 39.8 ^{**}
		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 ^{**}	446.7 ± 49.8 ^a	463.6 ± 53.1 ^{**}	480.4 ± 58.1 ^{**}	497.5 ± 62.9 ^{**}	507.2 ± 64.1 ^a	524.8 ± 67.2 ^{**}
		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 ^{**}	547.9 ± 72.5 ^a	553.7 ± 74.0 ^{**}	559.5 ± 75.6 ^{**}	570.3 ± 80.2 ^{**}	583.6 ± 77.5 ^a	588.9 ± 76.8 ^{**}
		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 ^{**}	595.6 ± 54.6 ^a	597.5 ± 73.1 ^{**}	611.5 ± 81.9 ^{**}	620.3 ± 78.8 ^{**}			
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	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 [*]	168.8 ± 11.1 ^{**}	182.2 ± 12.3 ^{**}	194.3 ± 13.8 ^a	204.9 ± 15.4 ^{**}
	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 ^a	172.9 ± 11.5 ^{**}
		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 ^{**}	220.2 ± 18.1 ^a	223.8 ± 18.5 ^{**}	228.6 ± 19.7 ^{**}	233.3 ± 20.8 ^{**}	237.0 ± 21.3 ^a	248.4 ± 22.2 ^{**}
	1.0	177.6 ± 11.8 ^{**}	181.8 ± 12.6 ^a	185.5 ± 12.2 ^{**}	188.6 ± 12.5 ^{**}	193.1 ± 12.6 ^{**}	195.5 ± 13.1 ^a	202.2 ± 13.8 ^{**}
		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 ^{**}	268.7 ± 27.7 ^a	272.6 ± 29.1 ^{**}	278.7 ± 31.8 ^{**}	291.3 ± 36.3 [*]	301.9 ± 40.8 ^a	313.1 ± 45.1 [*]
	1.0	210.5 ± 14.4 ^{**}	216.0 ± 14.6 ^a	221.2 ± 16.5 ^{**}	226.6 ± 16.4 ^{**}	229.5 ± 17.2 ^{**}	232.8 ± 19.1 ^a	236.8 ± 20.9 ^{**}
		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 [*]	348.3 ± 55.3 ^a	351.4 ± 73.3 ^{**}	366.3 ± 59.4 ^{**}	377.1 ± 68.4 ^{**}	394.4 ± 72.6 ^a	402.8 ± 75.6 ^{**}
	1.0	245.3 ± 24.0 ^{**}	249.7 ± 25.1 ^a	251.8 ± 26.1 ^{**}	254.1 ± 27.2 ^{**}	261.9 ± 31.3 ^{**}	267.2 ± 34.7 ^a	273.0 ± 37.0 ^{**}
		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 [*]	471.4 ± 99.9	474.2 ± 105.7			
0.2	411.2 ± 74.6 [*]	397.7 ± 50.7 ^a	393.3 ± 54.1 ^{**}	400.8 ± 55.7 ^{**}	402.8 ± 73.3 ^{**}			
1.0	281.1 ± 45.3 ^{**}	284.4 ± 36.5 ^a	288.7 ± 47.6 ^{**}	291.0 ± 50.8 ^{**}	294.3 ± 53.2 ^{**}			

^a: Mean±SD

^{*}, ^{**}: 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 ^a	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*						

^a: 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 ^a ± 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

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

a : Mean \pm 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
Male				
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
Female				
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T₃、T₄及び甲状腺刺激ホルモンTSH濃度の変動

Group	Rat No.	T ₃ (ng/mL)	T ₄ (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T₃, T₄及びTSHの濃度

Sex	Group	Rat No.	T ₃ (ng/mL)	T ₄ (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	1.005	1.010	1.015	1.020	1.025	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
	0.04	No. of animals		30	29			30			30										29			27										27			27				
		2	4	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
	0.2	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
	1	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
	Female	0	No. of animals		8	7			7			6										6			6										6			6			
			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
		0.04	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
0.2		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
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

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 ^a	38	37	37
Body weight (g)	661.6 ± 91.1 ^b	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 ^a	31	27	44
Body weight (g)	494.0 ± 119.3 ^b	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(ホコッソ抽出物の発がん性試験)

Male	Dose level (%)			
	0	0.04	0.2	1
No. of animals	34 ^a	38	37	37
Organs				
Brain	3.17 ± 0.49 ^b	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(ホコッソ抽出物の発がん性試験)

Female	Dose level (%)			
	0	0.04	0.2	1
No. of animals	28 ^a	31	27	44
Organs				
Brain	4.10 ± 1.11 ^b	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				
	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			