

Table 77-6

Incidence and multiplicity of proliferative/neoplastic lesions in esophagus of rats exposed to DHPN and DMBA following prepubertal DBDE treatment

	Dose	No. of rats	Basal cell hyperplasia		Squamous cell hyperplasia		Papilloma	
			Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity
Male	Control	15	5 (33)	0.33±0.49	9 (60)	1.07±1.16	5 (33)	0.40±0.63
	0.001%	20	5 (25)	0.30±0.57	14 (70)	0.80±0.62	5 (25)	0.25±0.44
	0.01%	20	5 (25)	0.25±0.44	12 (60)	1.05±1.39	7 (35)	0.40±0.60
	0.25%	20	4 (20)	0.25±0.55	16 (80)	1.10±0.79	2 (10)	0.10±0.31
	2.5%	20	3 (15)	0.15±0.37	13 (65)	1.15±1.50	3 (15)	0.15±0.37
Female	Control	15	4 (27)	0.33±0.62	8 (53)	1.00±1.25	6 (40)	0.47±0.64
	0.001%	18	2 (11)	0.17±0.51	8 (44)	0.50±0.62	6 (33)	0.39±0.61
	0.01%	17	3 (18)	0.24±0.56	8 (47)	0.71±0.85	9 (53)	0.76±0.97
	0.25%	20	8 (40)	0.55±0.83	15 (75)	1.05±0.76	7 (35)	0.45±0.69
	2.5%	19	8 (42)	0.47±0.61	6 (32)	0.47±0.77	5 (26)	0.32±0.58

Each multiplicity value represents the mean±S.D.

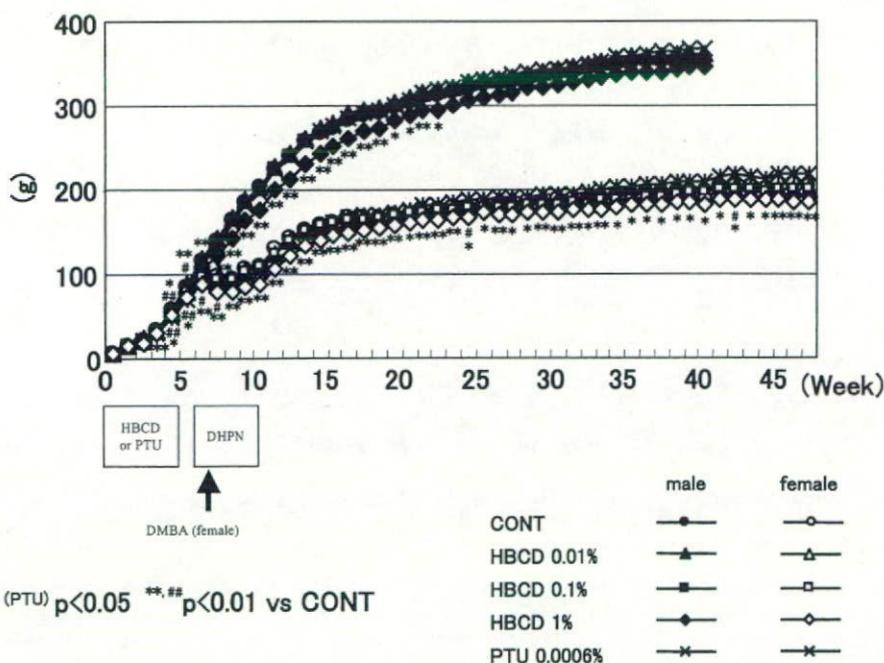
**Table 78**

**Final body and organ weights of dams fed diet containing HBCD or PTU**

Dose (%)	0 (CONT)	0.01	0.1	1	PTU
No. of animals	5	5	5	5	5
Final body weight (g)	204±2	206±2	207±5	216±8*	215±9*
<b>Absolute organ weights</b>					
Liver (g)	8.7±0.3	8.4±0.2	9.3±0.5*	11.3±0.9***	8.8±0.5
Thyroids (mg)	12±3	10±1	11±1	13±3	37±2***
<b>Relative organ weights</b>					
Liver (g%)	4.3±0.1	4.1±0.1*	4.5±0.2	5.2±0.3***	4.1±0.1*
Thyroids (mg%)	6±1	5±1	5±0	6±1	17±1***

Each value represents the mean±S.D.

\* p<0.05 \*\*\* p<0.001 vs CONT



**Fig. 91. Body weight curves of rats exposed to DHPN and DMBA following prepubertal HBCD or PTU treatment**



**Table 81a Proliferative lesions in kidney of rats exposed to DHPN and DMBA following prepubertal HBCD or PTU treatment**

Group	No. of rat	Basophilic tubules		Renal cell hyperplasia		Renal cell adenoma		Renal cell carcinoma		Renal cell adenoma + carcinoma		
		Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	
Male	Basal diet	22	14 ( 64 )	0.77 ± 0.69	9 ( 41 )	0.45 ± 0.60	4 ( 18 )	0.27 ± 0.63	0		4 ( 18 )	0.27 ± 0.63
	PTU 0.0006%	24	16 ( 67 )	0.92 ± 0.78	15 ( 63 )	0.79 ± 0.88	5 ( 21 )	0.25 ± 0.53	7 ( 29 )**	0.33 ± 0.56	12 ( 50 )	0.58 ± 0.65
	HBCD 0.01%	20	9 ( 45 )	0.45 ± 0.51	6 ( 30 )	0.40 ± 0.68	5 ( 25 )	0.35 ± 0.67	6 ( 30 )	0.30 ± 0.47	10 ( 50 )	0.65 ± 0.75
	HBCD 0.1%	25	15 ( 60 )	0.60 ± 0.50	5 ( 20 )	0.20 ± 0.41	6 ( 24 )	0.24 ± 0.44	5 ( 20 )	0.32 ± 0.69	10 ( 40 )	0.56 ± 0.82
	HBCD 1%	25	12 ( 48 )	0.60 ± 0.71	7 ( 28 )	0.28 ± 0.46	5 ( 20 )	0.20 ± 0.41	3 ( 12 )	0.12 ± 0.33	8 ( 32 )	0.32 ± 0.48
Female	Basal diet	24	4 ( 17 )	0.25 ± 0.61	11 ( 46 )	0.67 ± 0.87	2 ( 8 )	0.08 ± 0.28	0		2 ( 8 )	0.08 ± 0.28
	PTU 0.0006%	18	4 ( 22 )	0.39 ± 0.85	9 ( 50 )	0.67 ± 0.84	3 ( 17 )	0.22 ± 0.55	0		3 ( 17 )	0.22 ± 0.55
	HBCD 0.01%	23	8 ( 35 )	0.61 ± 0.94	8 ( 35 )	0.65 ± 1.03	3 ( 13 )	0.13 ± 0.34	3 ( 13 )	0.13 ± 0.34	6 ( 26 )	0.26 ± 0.45
	HBCD 0.1%	23	7 ( 30 )	0.35 ± 0.57	3 ( 13 )*	0.17 ± 0.49	2 ( 9 )	0.09 ± 0.29	1 ( 4 )	0.04 ± 0.21	3 ( 13 )	0.13 ± 0.34
	HBCD 1%	16	3 ( 19 )	0.31 ± 0.79	7 ( 44 )	0.63 ± 0.89	3 ( 19 )	0.31 ± 0.79	0		3 ( 19 )	0.31 ± 0.79

\*, \*\* Significantly different from corresponding basal diet group at p<0.05, 0.01, respectively

**Table 81b Proliferative lesions in the kidney of rats exposed to DHPN and DMBA following prepubertal HBCD or PTU treatment**

Group	No. of rat	Basophilic tubules		Renal cell hyperplasia		Renal cell adenoma		Renal cell carcinoma + adenoma		Regenerative	
		Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity
Male	Basal diet	22	14   64   0.77   0.69	9   41   0.45   0.60	4   18   0.27   0.63	0   0   0.00   0.00	4   18   0.27   0.63	14   64   0.77   0.69			
	PTU 0.0006%	24	16   67   0.92   0.78	15   63   0.79   0.88	5   21   0.25   0.53	7   29   0.33   0.56	12   50   0.58   0.65				
	HBCD 0.01%	20	9   45   0.45   0.51	6   30   0.40   0.68	5   25   0.35   0.67	6   30   0.30   0.47	10   50   0.65   0.75				
	HBCD 0.1%	25	15   60   0.60   0.50	5   20   0.20   0.41	6   24   0.24   0.44	5   20   0.32   0.69	10   40   0.56   0.82				
	HBCD 1%	25	12   48   0.60   0.71	7   28   0.28   0.46	5   20   0.20   0.41	3   12   0.12   0.33	8   32   0.32   0.48				
Female	Basal diet	24	4   17   0.25   0.61	11   46   0.67   0.87	2   8   0.08   0.28	0   0   0.00   0.00	2   8   0.08   0.28				
	PTU 0.0006%	18	4   22   0.39   0.85	9   50   0.67   0.84	3   17   0.22   0.55	0   0   0.00   0.00	3   17   0.22   0.55				
	HBCD 0.01%	23	8   35   0.61   0.94	8   35   0.65   1.03	3   13   0.13   0.34	3   13   0.13   0.34	6   26   0.26   0.45				
	HBCD 0.1%	23	7   30   0.35   0.57	3   13   0.17   0.49	2   9   0.09   0.29	1   4   0.04   0.21	3   13   0.13   0.34				
	HBCD 1%	16	3   19   0.31   0.79	7   44   0.63   0.89	3   19   0.31   0.79	0   0   0.00   0.00	3   19   0.31   0.79				

\* Significantly different from corresponding basal diet group at p<0.05

**Table 82a Proliferative lesions in thyroid of rats exposed to DHPN and DMBA following prepubertal HBCD or PTU treatment**

Group	No. of rat	Focal follicular cell hyperplasia		Follicular cell adenoma		Follicular cell carcinoma		Follicular cell adenoma + carcinoma		
		Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	
Male	Basal diet	22	18 ( 82 )	2.55 ± 1.79	13 ( 59 )	0.91 ± 0.97	15 ( 68 )	1.27 ± 1.24	18 ( 82 )	2.18 ± 1.76
	PTU 0.0006%	24	6 ( 25 )**	0.42 ± 1.06**	7 ( 29 )	0.42 ± 0.72	8 ( 33 )*	0.50 ± 0.93*	12 ( 50 )	0.92 ± 1.10*
	HBCD 0.01%	19	18 ( 95 )	3.37 ± 2.03	15 ( 79 )	1.63 ± 1.16	15 ( 79 )	1.47 ± 1.12	18 ( 95 )	3.11 ± 1.66
	HBCD 0.1%	25	22 ( 88 )	2.64 ± 2.10	19 ( 76 )	1.44 ± 1.29	19 ( 76 )	1.00 ± 0.87	24 ( 96 )	2.44 ± 1.36
	HBCD 1%	25	18 ( 72 )	1.12 ± 0.97*	15 ( 60 )	0.92 ± 0.95	11 ( 44 )	0.60 ± 0.91	18 ( 72 )	1.52 ± 1.53
Female	Basal diet	24	13 ( 54 )	0.92 ± 1.35	11 ( 46 )	0.79 ± 1.10	4 ( 17 )	0.17 ± 0.38	13 ( 54 )	0.96 ± 1.23
	PTU 0.0006%	18	2 ( 11 )**	0.11 ± 0.32**	2 ( 11 )*	0.11 ± 0.32*	0		2 ( 11 )**	0.11 ± 0.32**
	HBCD 0.01%	23	14 ( 61 )	1.09 ± 1.08	11 ( 48 )	0.83 ± 1.11	3 ( 13 )	0.17 ± 0.49	13 ( 57 )	1.00 ± 1.24
	HBCD 0.1%	22	12 ( 55 )	0.91 ± 1.19	8 ( 36 )	0.45 ± 0.67	4 ( 18 )	0.18 ± 0.39	9 ( 41 )	0.64 ± 0.90
	HBCD 1%	16	8 ( 50 )	0.69 ± 0.79	7 ( 44 )	0.63 ± 0.89	2 ( 13 )	0.19 ± 0.54	7 ( 44 )	0.81 ± 1.11

\*, \*\* Significantly different from corresponding basal diet group at p<0.05, 0.01, respectively

**Table 82b Proliferative lesions in thyroid of rats exposed to DHPN and DMBA following prepubertal HBCD or PTU treatment**

Group	No. of rat	C-cell hyperplasia		C-cell adenoma		C-cell carcinoma		C-cell adenoma + carcinoma		
		Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	
Male	Basal diet	22	0		1 ( 5 )	0.05 ± 0.21	0		1 ( 5 )	0.05 ± 0.21
	PTU 0.0006%	24	2 ( 8 )	0.08 ± 0.28	2 ( 8 )	0.08 ± 0.28	2 ( 8 )	0.08 ± 0.28	4 ( 17 )	0.17 ± 0.38
	HBCD 0.01%	19	3 ( 16 )	0.16 ± 0.37	0		1 ( 5 )	0.05 ± 0.23	1 ( 5 )	0.05 ± 0.23
	HBCD 0.1%	25	3 ( 12 )	0.12 ± 0.33	1 ( 4 )	0.04 ± 0.20	3 ( 12 )	0.12 ± 0.33	4 ( 16 )	0.16 ± 0.37
	HBCD 1%	25	4 ( 16 )	0.16 ± 0.37	3 ( 12 )	0.12 ± 0.33	1 ( 4 )	0.04 ± 0.20	4 ( 16 )	0.16 ± 0.37
Female	Basal diet	24	2 ( 8 )	0.08 ± 0.28	1 ( 4 )	0.04 ± 0.20	1 ( 4 )	0.04 ± 0.20	2 ( 8 )	0.08 ± 0.28
	PTU 0.0006%	18	2 ( 11 )	0.11 ± 0.32	1 ( 6 )	0.06 ± 0.24	2 ( 11 )	0.11 ± 0.32	3 ( 17 )	0.17 ± 0.38
	HBCD 0.01%	23	2 ( 9 )	0.09 ± 0.29	3 ( 13 )	0.13 ± 0.34	2 ( 9 )	0.09 ± 0.29	4 ( 17 )	0.22 ± 0.52
	HBCD 0.1%	22	1 ( 5 )	0.05 ± 0.21	1 ( 5 )	0.05 ± 0.21	1 ( 5 )	0.05 ± 0.21	2 ( 9 )	0.09 ± 0.29
	HBCD 1%	16	0		1 ( 6 )	0.06 ± 0.25	1 ( 6 )	0.06 ± 0.25	2 ( 13 )	0.13 ± 0.34

**Table 83 Proliferative lesions in lung of rats exposed to DHPN and DMBA following prepubertal HBCD or PTU treatment**

Group	No. of rat	Alveolar cell hyperplasia		Adenoma		Adenocarcinoma		Adenoma + Adenocarcinoma		Squamous cell carcinoma		
		Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	
Male	Basal diet	21	21 ( 100 )	1.00 ± 0.00	21 ( 100 )	1.00 ± 0.00	19 ( 90 )	0.90 ± 0.30	21 ( 100 )	1.90 ± 0.30	5 ( 24 )	0.24 ± 0.44
	PTU 0.0006%	23	23 ( 100 )	1.00 ± 0.00	23 ( 100 )	1.00 ± 0.00	19 ( 83 )	0.83 ± 0.39	23 ( 100 )	1.83 ± 0.39	2 ( 9 )	0.09 ± 0.29
	HBCD 0.01%	19	19 ( 100 )	1.00 ± 0.00	19 ( 100 )	1.00 ± 0.00	19 ( 100 )	1.00 ± 0.00	19 ( 100 )	2.00 ± 0.00	2 ( 11 )	0.11 ± 0.32
	HBCD 0.1%	24	24 ( 100 )	1.00 ± 0.00	24 ( 100 )	1.00 ± 0.00	22 ( 92 )	0.92 ± 0.28	24 ( 100 )	1.92 ± 0.28	3 ( 13 )	0.13 ± 0.34
	HBCD 1%	24	24 ( 100 )	1.00 ± 0.00	24 ( 100 )	1.00 ± 0.00	20 ( 83 )	0.83 ± 0.38	24 ( 100 )	1.83 ± 0.38	0	
Female	Basal diet	22	22 ( 100 )	1.00 ± 0.00	20 ( 91 )	0.91 ± 0.29	16 ( 73 )	0.73 ± 0.46	20 ( 91 )	1.64 ± 0.66	4 ( 18 )	0.18 ± 0.39
	PTU 0.0006%	17	16 ( 94 )	0.94 ± 0.24	13 ( 76 )	0.76 ± 0.44	5 ( 29 )	0.29 ± 0.47**	13 ( 76 )	1.06 ± 0.75	0	
	HBCD 0.01%	22	22 ( 100 )	1.00 ± 0.00	22 ( 100 )	1.00 ± 0.00	18 ( 82 )	0.82 ± 0.39	22 ( 100 )	1.82 ± 0.39	3 ( 14 )	0.14 ± 0.35
	HBCD 0.1%	22	22 ( 100 )	1.00 ± 0.00	22 ( 100 )	1.00 ± 0.00	18 ( 82 )	0.82 ± 0.39	22 ( 100 )	1.82 ± 0.39	0	
	HBCD 1%	15	15 ( 100 )	1.00 ± 0.00	15 ( 100 )	1.00 ± 0.00	12 ( 80 )	0.80 ± 0.41	15 ( 100 )	1.80 ± 0.41	1 ( 7 )	0.07 ± 0.26

\*, \*\*: Significantly different from corresponding basal diet group at p<0.05, 0.01, respectively

**Table 84 Proliferative lesions in esophagus of rats exposed to DHPN and DMBA following prepubertal HBCD or PTU treatment**

Group	No. of rat	Epithelial hyperplasia		Papilloma		Squamous cell carcinoma		Papilloma + Squamous cell carcinoma		
		Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	
Male	Basal diet	22	6 ( 27 )	0.45 ± 0.86	4 ( 18 )	0.18 ± 0.39	1 ( 5 )	0.05 ± 0.21	5 ( 23 )	0.23 ± 0.43
	PTU 0.0006%	24	12 ( 50 )	0.63 ± 0.71	13 ( 54 )*	0.71 ± 0.75*	4 ( 17 )	0.21 ± 0.51	15 ( 63 )*	0.92 ± 0.83**
	HBCD 0.01%	20	16 ( 80 )**	1.25 ± 1.02	3 ( 15 )	0.15 ± 0.37	3 ( 15 )	0.15 ± 0.37	5 ( 25 )	0.30 ± 0.57
	HBCD 0.1%	25	13 ( 52 )	1.16 ± 1.49	7 ( 28 )	0.28 ± 0.46	3 ( 12 )	0.12 ± 0.33	10 ( 40 )	0.40 ± 0.50
	HBCD 1%	25	19 ( 76 )**	1.28 ± 1.17	6 ( 24 )	0.24 ± 0.44	0		6 ( 24 )	0.24 ± 0.44
Female	Basal diet	24	14 ( 58 )	1.04 ± 1.08	6 ( 25 )	0.29 ± 0.55	0		6 ( 25 )	0.29 ± 0.55
	PTU 0.0006%	18	11 ( 61 )	1.06 ± 1.11	5 ( 28 )	0.39 ± 0.00	2 ( 11 )	0.11 ± 0.32	6 ( 33 )	0.50 ± 0.86
	HBCD 0.01%	23	13 ( 57 )	1.30 ± 1.49	11 ( 48 )	0.61 ± 0.72	2 ( 9 )	0.09 ± 0.29	11 ( 48 )	0.70 ± 0.88
	HBCD 0.1%	22	13 ( 59 )	1.00 ± 1.07	6 ( 27 )	0.36 ± 0.73	0		6 ( 27 )	0.36 ± 0.73
	HBCD 1%	16	9 ( 56 )	1.31 ± 1.35	6 ( 38 )	0.50 ± 0.73	0		6 ( 38 )	0.50 ± 0.73

\*, \*\*: Significantly different from corresponding basal diet group at p<0.05, 0.01, respectively

**Table 85 Proliferative lesions in urinary bladder of rats exposed to DHPN and DMBA following prepubertal HBCD or PTU treatment**

Group	No. of rat	Transitional cell hyperplasia		Papilloma, transitional cell		Carcinoma, transitional cell		Papilloma + carcinoma		
		Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	
Male	Basal diet	22	6 ( 27 )	0.36 ± 0.73	5 ( 23 )	0.27 ± 0.55	2 ( 9 )	0.09 ± 0.29	7 ( 32 )	0.36 ± 0.58
	PTU 0.0006%	24	9 ( 38 )	0.50 ± 0.72	1 ( 4 )	0.04 ± 0.20	2 ( 8 )	0.08 ± 0.28	3 ( 13 )	0.13 ± 0.34
	HBCD 0.01%	20	8 ( 40 )	0.55 ± 0.83	1 ( 5 )	0.05 ± 0.22	1 ( 5 )	0.05 ± 0.22	2 ( 10 )	0.10 ± 0.31
	HBCD 0.1%	25	4 ( 16 )	0.20 ± 0.50	2 ( 8 )	0.08 ± 0.28	3 ( 12 )	0.12 ± 0.33	5 ( 20 )	0.20 ± 0.41
	HBCD 1%	25	2 ( 8 )	0.08 ± 0.28	4 ( 16 )	0.20 ± 0.50	1 ( 4 )	0.04 ± 0.20	5 ( 20 )	0.24 ± 0.52
Female	Basal diet	24	0		0		0		0	
	PTU 0.0006%	18	4 ( 22 )*	0.33 ± 0.69	4 ( 22 )*	0.22 ± 0.43	1 ( 6 )	0.06 ± 0.24	5 ( 28 )*	0.28 ± 0.46
	HBCD 0.01%	23	4 ( 17 )*	0.17 ± 0.39	2 ( 9 )	0.09 ± 0.29	1 ( 4 )	0.04 ± 0.21	2 ( 9 )	0.13 ± 0.46
	HBCD 0.1%	22	2 ( 9 )	0.09 ± 0.29	3 ( 14 )	0.14 ± 0.35	0		3 ( 14 )	0.14 ± 0.35
	HBCD 1%	16	0		1 ( 6 )	0.06 ± 0.25	2 ( 13 )	0.19 ± 0.54	3 ( 19 )	0.25 ± 0.58

\*: Significantly different from corresponding basal diet group at p<0.05

**Table 86 Proliferative lesions in mammary gland of female rats exposed to DHPN and DMBA following prepubertal HBCD or PTU treatment**

Group	No. of rat	Adenoma		Adenocarcinoma		Fibroma		Fibroadenoma		All lesions	
		Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity	Incidence	Multiplicity
Basal diet	24	1 ( 4 )	0.04 ± 0.20	3 ( 13 )	0.21 ± 0.66	3 ( 13 )	0.13 ± 0.34	4 ( 17 )	0.21 ± 0.51	6 ( 25 )	0.58 ± 1.14
PTU 0.0006%	18	0		1 ( 6 )	0.06 ± 0.24	0		0		1 ( 6 )	0.06 ± 0.24
HBCD 0.01%	23	0		6 ( 26 )	0.26 ± 0.45	1 ( 4 )	0.04 ± 0.21	4 ( 17 )	0.17 ± 0.39	8 ( 35 )	0.48 ± 0.73
HBCD 0.1%	23	0		1 ( 4 )	0.04 ± 0.21	2 ( 9 )	0.09 ± 0.29	3 ( 13 )	0.17 ± 0.49	6 ( 26 )	0.3 ± 0.56
HBCD 1%	17	0		0		0		1 ( 6 )	0.06 ± 0.24	1 ( 6 )	0.06 ± 0.24

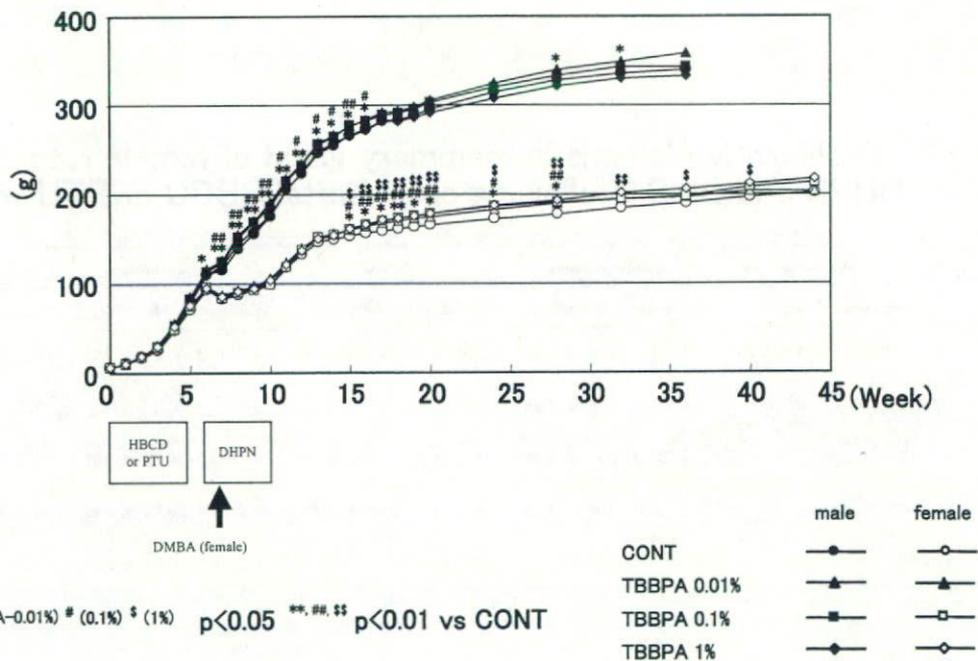
**Table 87**

**Final body and organ weights of dams fed diet containing TBBPA**

Dose(%)	0 (CONT)	0.01	0.1	1
No. of animals	6	6	6	6
Final body weight (g)	209±9	208±6	203±9	208±4
Absolute organ weights				
Liver (g)	9.0±0.7	8.5±0.6	8.4±0.7	8.2±0.5
Kidneys (g)	1.5±0.1	1.4±0.1	1.4±0.1	1.5±0.1
Thyroids (mg)	9.8±0.8	11.8±0.8*	10.8±1.5	13.2±0.8**
Relative organ weights				
Liver (g%)	4.3±0.2	4.1±0.2	4.1±0.2	3.9±0.3
Kidneys (g%)	0.7±0.0	0.7±0.0	0.7±0.0	0.7±0.0
Thyroids (mg%)	4.7±0.4	5.7±0.2	5.4±1.0	6.3±0.4**

Each value represents the mean±S.D.

\* p<0.05 \*\* p<0.01 vs CONT



**Fig. 92. Body weight curves of rats exposed to DHPN and DMBA following prepubertal TBBPA treatment**

**Table 88 Final body and organ weights of rats exposed to DHPN and DMBA following prepubertal TBBPA treatment**

Dose(%)		0 (Control)	0.01	0.1	1
Male	No. of animals	13	12	15	15
	Final body weight (g)	315±49	350±53	349±36	332±31
Absolute organ weights					
	Liver (g)	9.2±1.4	9.5±1.5	10.0±0.9	8.9±1.5
	Kidneys (g)	9.0±14.1	9.6±14.3	10.4±16.0	3.5±1.7
	Thyroids (mg)	125±112	75±105	53±55	43±23
Relative organ weights					
	Liver (g%)	3.0±0.5	2.7±0.2	2.8±0.2	2.7±0.2
	Kidneys (g%)	3.1±5.0	2.8±3.8	3.2±5.1	1.0±0.5
	Thyroids (mg%)	42±35	22±30	15±16**	15±7**
Female	No. of animals	23	13	17	14
	Final body weight (g)	200±30	204±17	205±21	199±38
Absolute organ weights					
	Liver (g)	6.3±1.0	6.8±0.9	6.6±1.4	6.5±0.9
	Kidneys (g)	5.3±9.8	6.3±8.2	10.4±16.6	14.0±18.8
Relative organ weights					
	Liver (g%)	3.1±0.3	3.3±0.5	3.2±0.8	3.1±0.3
	Kidneys (g%)	2.6±4.6	3.1±4.0	5.4±8.3	6.9±9.2

Each value represents the mean±S.D.

\*\* p<0.01 vs CONT

**Table 89 Final body and organ weights of rats treated with DBDE**

Male	Age at sacrifice	3 week			6 week		
		0 (CONT)	0.01	2.5	0 (CONT)	0.01	2.5
No. of animals		5	5	4	8	5	5
Final body weights (g)		35.2±2.2	33.7±1.7	33.8±1.7	117±6	108±7	100±10**
Absolute organ weights							
	Liver (g)	1.2±0.1	1.2±0.1	1.8±0.1**	4.2±0.5	4.2±0.7	4.4±0.8
	Kidneys (g)	0.4±0.0	0.4±0.0	0.4±0.0	1.0±0.0	0.9±0.1	0.9±0.1*
	Thyroids (mg)	4.6±0.4	4.6±0.5	4.7±0.3	8.8±0.6	8.1±0.7	9.0±1.3
Relative organ weights							
	Liver (g%)	3.4±0.2	3.6±0.0	5.5±0.2*	3.6±0.3	3.9±0.5	4.4±0.4*
	Kidneys (g%)	1.1±0.0	1.1±0.0	1.1±0.0	0.9±0.0	0.9±0.1	0.9±0.0
	Thyroids (mg%)	13.1±0.6	13.7±1.3	13.9±1.5	7.5±0.5	7.5±0.2	8.9±0.9**
Female	No. of animals	4	4	5	5	4	5
	Final body weight (g)	33.2±1.7	33.3±2.8	31.2±1.2	98±4	91±3*	92±3
Absolute organ weights							
	Liver (g)	1.1±0.1	1.2±0.2	1.7±0.1**	3.6±0.3	3.3±0.3	4.1±0.3
	Kidneys (g)	0.4±0.0	0.4±0.0	0.4±0.0	0.9±0.1	0.8±0.1	0.8±0.0
	Thyroids (mg)	4.9±0.6	5.2±0.5	5.2±0.6	8.1±0.6	7.3±0.8	9.0±0.9
Relative organ weights							
	Liver (g%)	3.4±0.1	3.5±0.2	5.6±0.2**	3.7±0.2	3.6±0.2	4.4±0.2**
	Kidneys (g%)	1.1±0.0	1.1±0.0	1.1±0.0	0.9±0.1	0.9±0.1	0.9±0.1
	Thyroids (mg%)	14.7±1.9	15.5±0.4	16.7±1.6	8.3±0.9	8.0±0.9	9.8±0.8*

\* p<0.05 \*\* p<0.01 vs CONT

Table 90 Serum hormone levels of rats treated with DBDE

Dose (%)		0 (CONT)	0.01	2.5
Male	No. of animals	8	5	5
	T4 (ng/mL)	4.0±0.4	4.1±0.3	2.7±0.2**
	T3 (ng/mL)	1.1±0.1	1.1±0.1	1.0±0.1
	TSH (µg/dL)	4.6±0.6	4.5±0.4	4.0±0.4
Female	No. of animals	5	4	5
	T4 (ng/mL)	3.1±0.5	3.0±0.5	2.2±0.3*
	T3 (ng/mL)	1.0±0.1	1.0±0.1	0.9±0.1
	TSH (µg/dL)	4.0±0.4	4.4±0.4	5.1±1.2

\* p<0.05 \*\* p<0.01 vs CONT

Table 91 Proliferave activity of thyroid follicular cells of rats treated with DBDE

Age at sacrifice		3 week			6 week		
Dose (%)		0 (CONT)	0.01	2.5	0 (CONT)	0.01	2.5
Male	No. of animals	5	5	4	8	5	5
	BrdU-labeling index (%)	5.0±1.5	5.4±1.1	4.8±1.8	1.6±1.0	1.8±1.9	0.8±0.9
Female	No. of animals	4	4	5	5	4	5
	BrdU-labeling index (%)	4.1±0.9	4.3±1.1	4.8±2.0	1.3±0.6	1.1±1.0	2.7±2.1

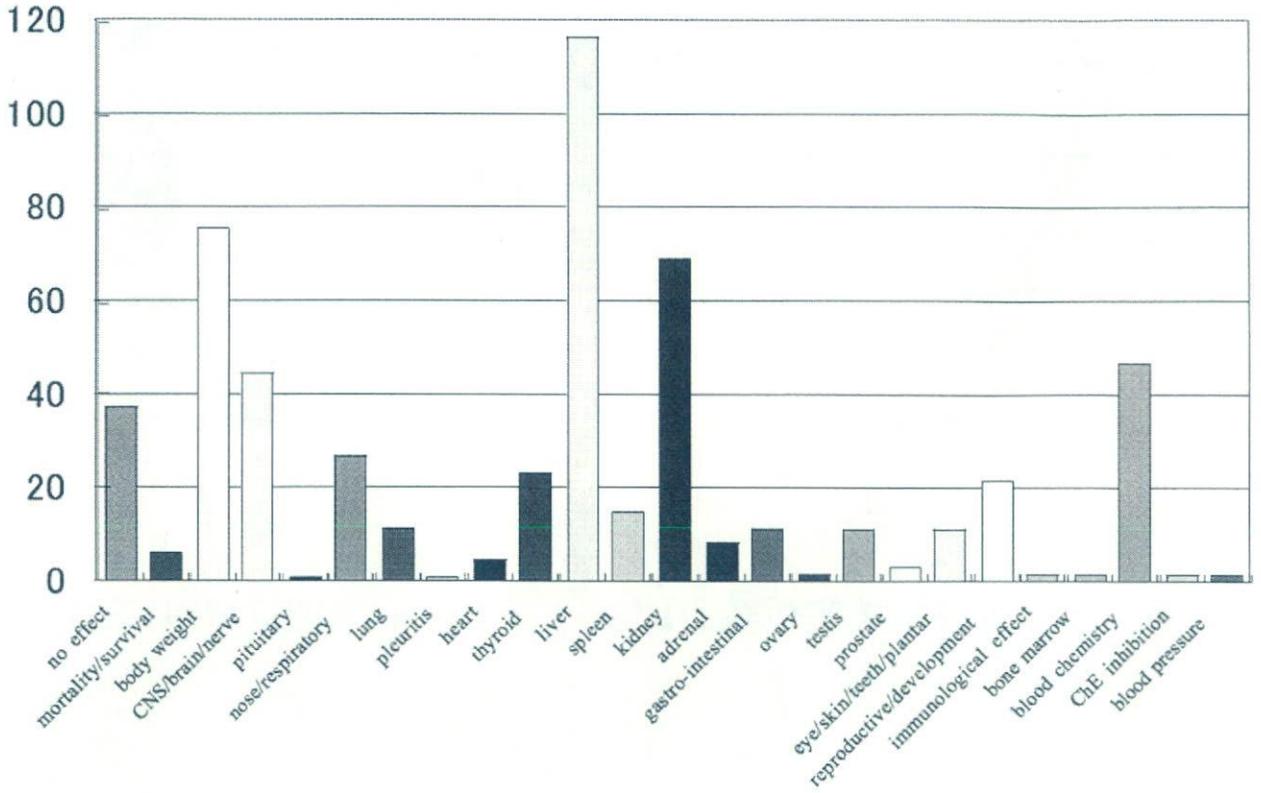


Fig. 93. RfD(C)算定の根拠となったエンドポイントの種類分布

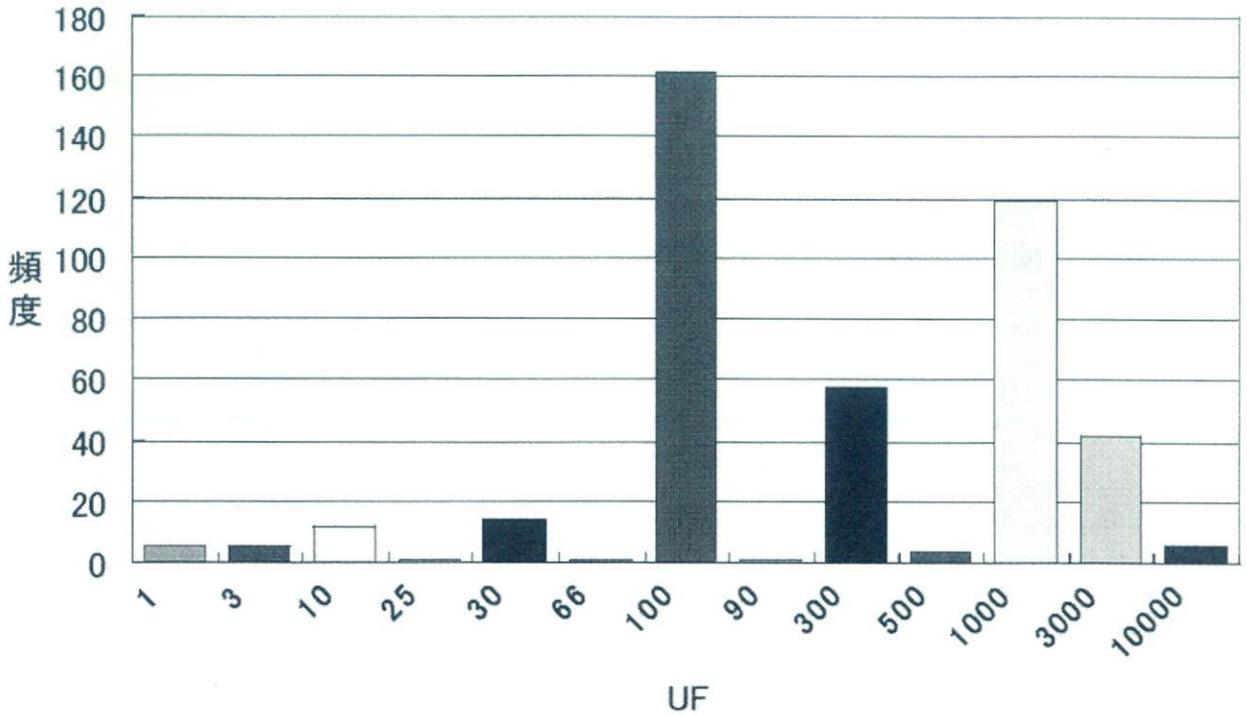


Fig. 94. 総合不確実係数の分布(IRIS)

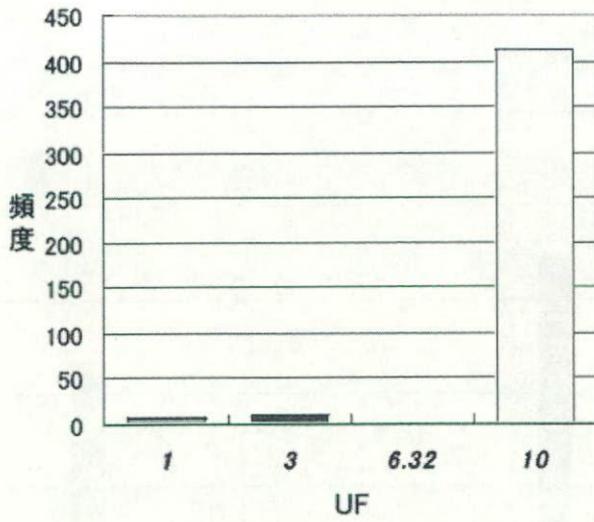


Fig. 95. 個人差不確實係数 (IRIS)

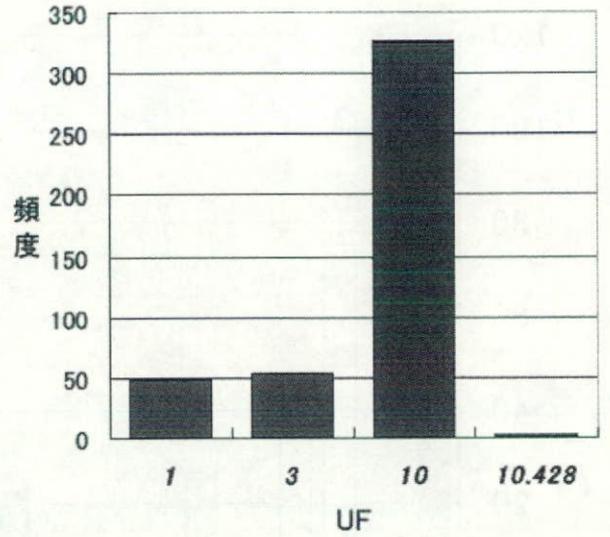


Fig. 96. 種差不確實係数 (IRIS)

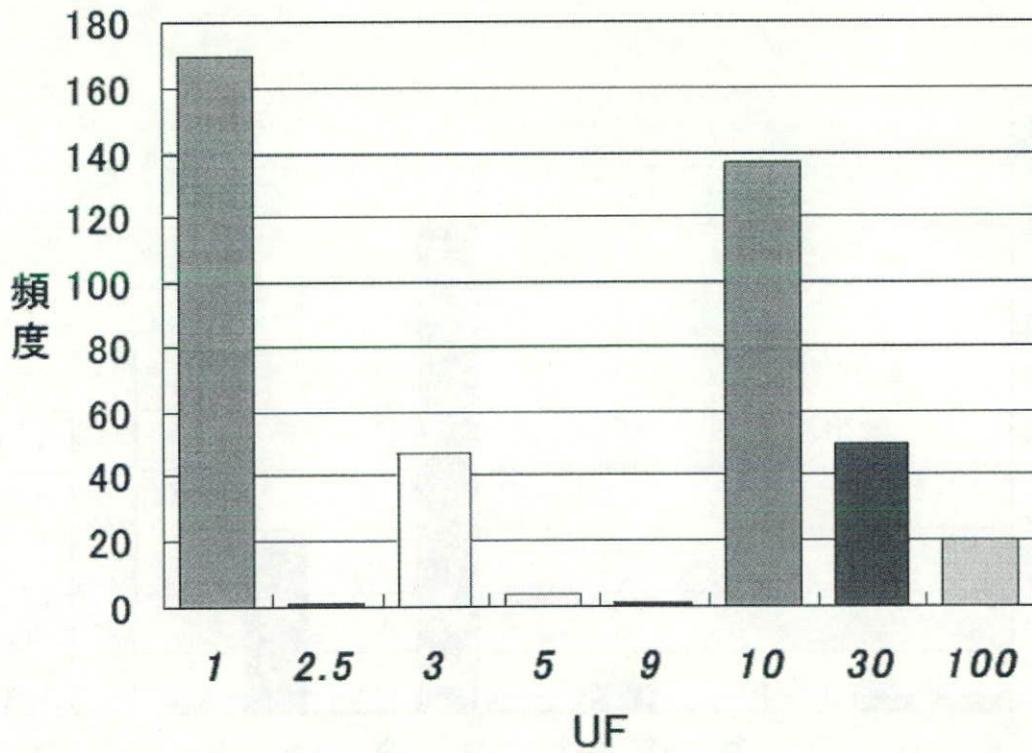


Fig. 97. 追加の不確實係数 (IRIS)

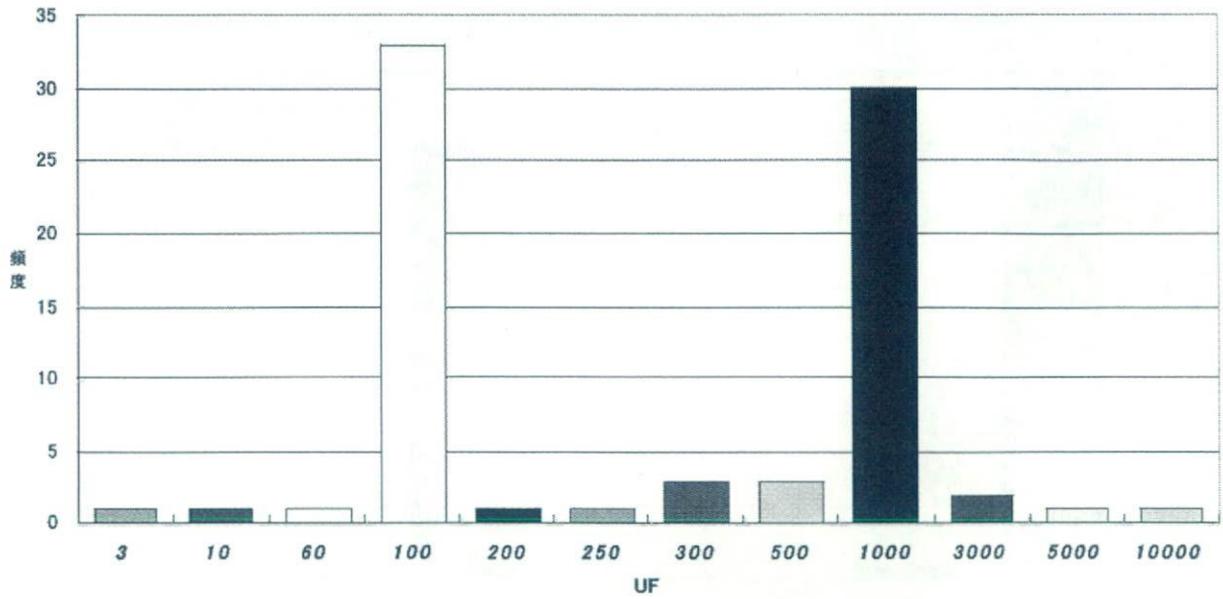


Fig. 98. 総合不確実係数の分布(WHO-GDWQ)

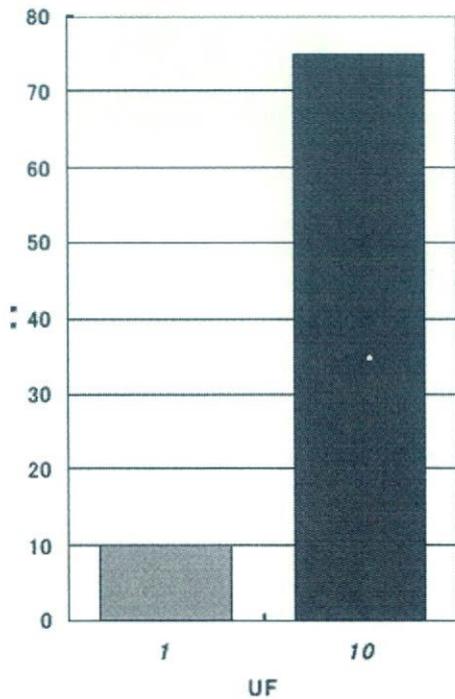


Fig. 199. 種差不確実係数の分布 (WHO-GDWQ)

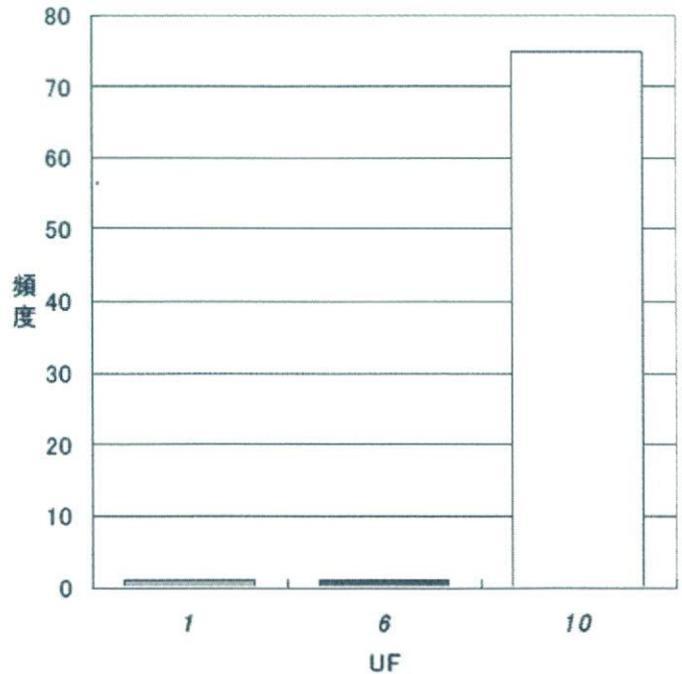


Fig. 100. 個人差不確実係数の分布 (WHO-GDWQ)

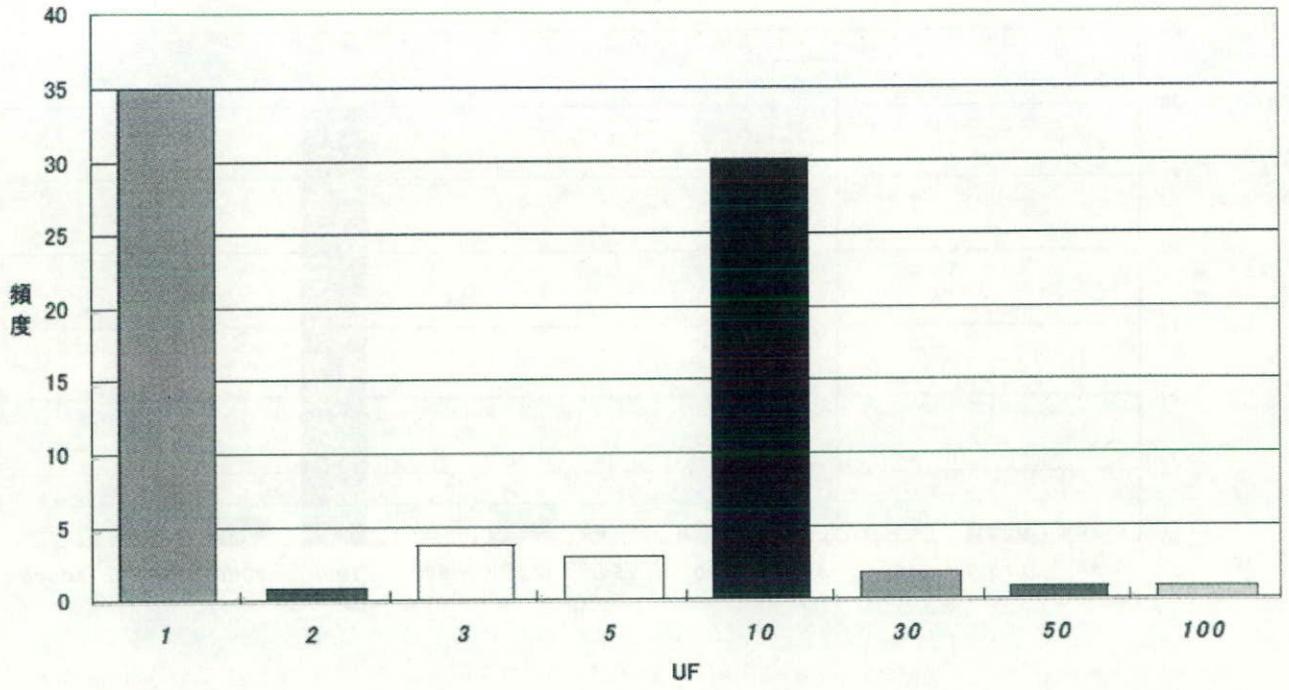


Fig. 101. 追加の不確実係数の分布(WHO-GDWQ)



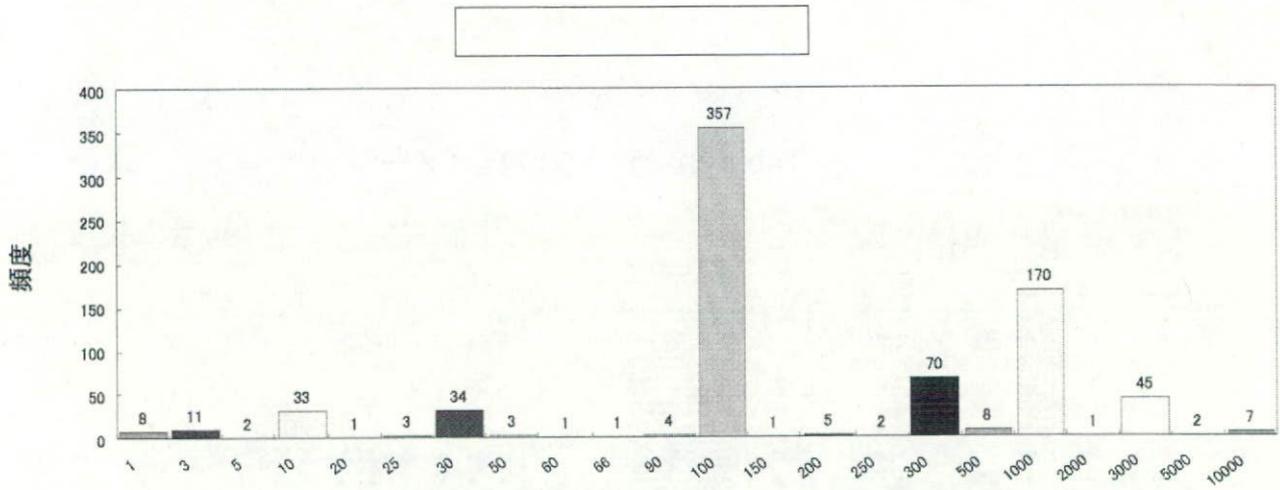


Fig. 103. 総合不確実係数の分布

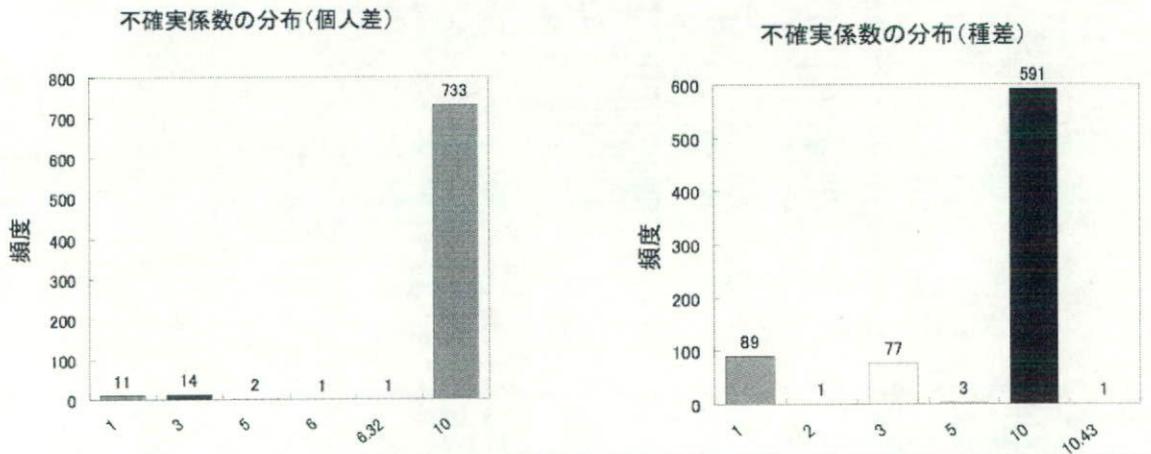


Fig. 104. 個人差・種差に関する不確実係数の分布

追加のUFの理由

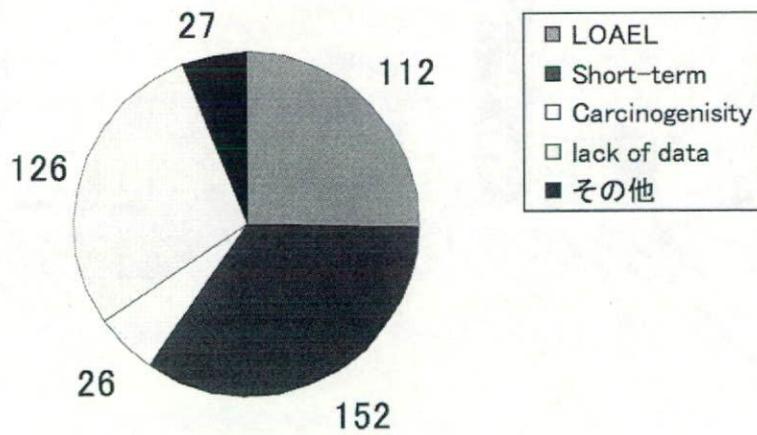


Fig. 105. 追加不確実係数の理由

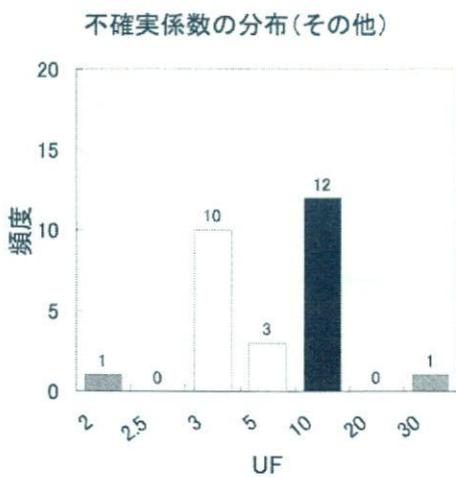
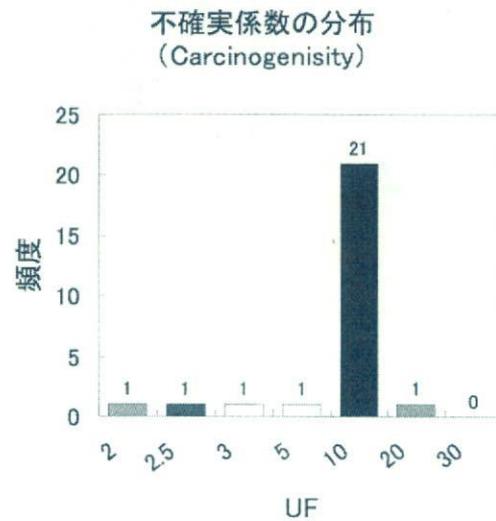
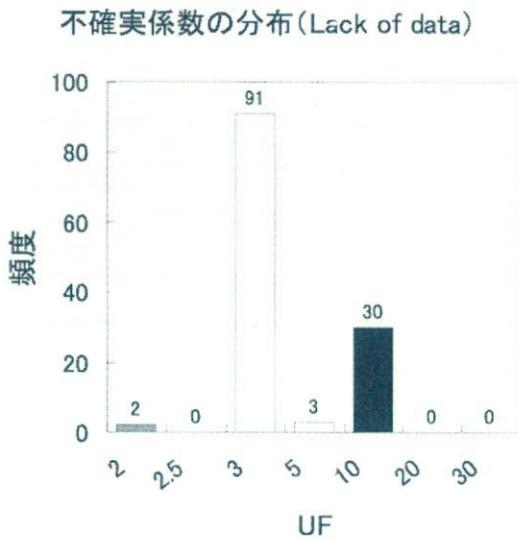
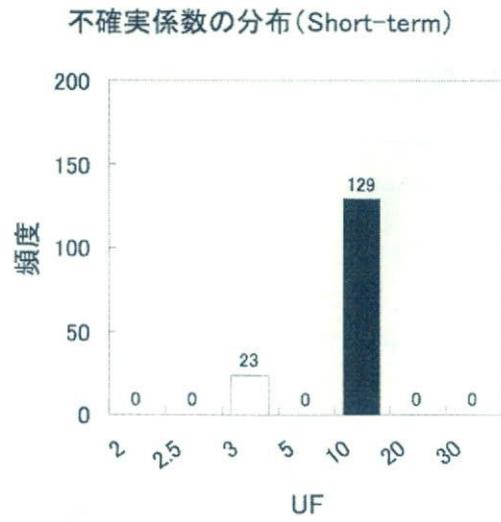
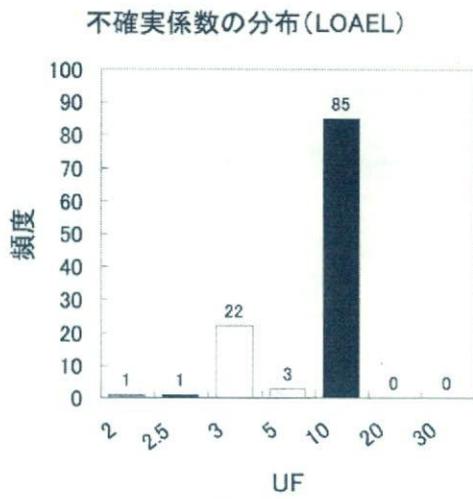


Fig. 106. 追加不確実係数の各理由ごとの適用状況

Table 93

表1 発生毒性をTDI設定の指標とした場合のUFの理由

指標となった影響	合計UF	種差	個体差	LOAEL の使用	短期試験 の使用	毒性の 重篤性	DBの 不足	不明	追加のUFの理由(詳細)
Reduced pup weight	100	10	10						
cleft palate	300	10	10				3		severity of the effects at the LEL dose observed in the critical study, and 2) maternal toxicity (mortality) and developmental toxicity (cleft palate) observed in the mouse teratology studies
decrease pup survival	1000	10	10					10	
Reduced pup weight	100	10	10						
Reduced pup weight	100	10	10						
Neurodevelopmental effects	100	10	10						
decrease in the size of the litters	1000	10	10		10				
Reduced pup weights	300	3	10					10	database deficiencies
Reduced body weight	100	10	10						
slightly dilated ureters in fetuses; reduced offspring weight	300	10	10					3	lack of multigeneration
Delayed fetal ossification	300	3	10					10	no multigeneration reproductive study and no definitive developmental toxicity studies
Increased incidence of renal tubular dilation	100	10	10						
Reduced fertility in the F1/F2b generation	100	10	10						
Excessive loss of litters	1000	10	10					10	poor quality of the database on chronic toxicity.
Decreased pup body weight	1000	10	10					10	deficiencies in the available database.
skeletal variations	300	3	10					10	database deficiencies
Reduced fetal body weight, skeletal variations, and increased fetal death	300	3	10					10	lack of developmental neurotoxicity data and definitive neurotoxicity data in general, and any chronic toxicity data.
reduction in the number of viable fetuses	100	10	10						
Decreased body weight	300	10	10					3	the lack of a chronic feeding study in a second species
Reduced weight	3000	10	10	10				3	equivocal evidence of developmental effects and data gaps

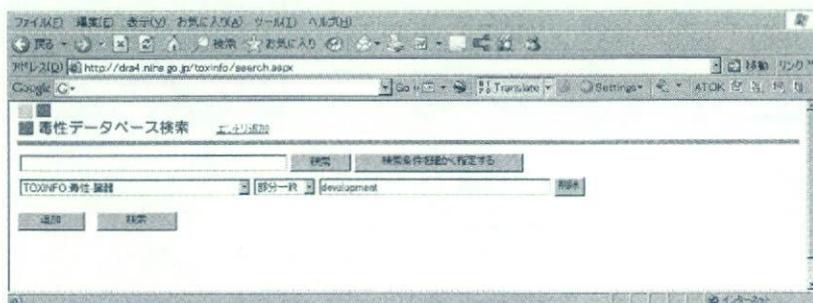


Fig. 107 検索画面

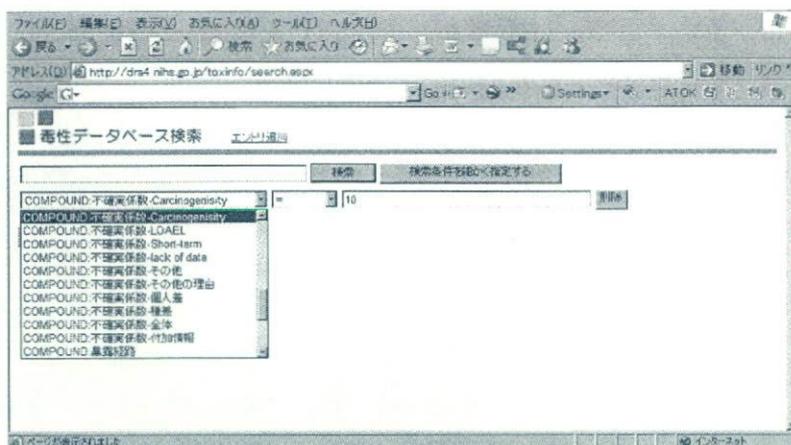


Fig. 108 項目選択画面

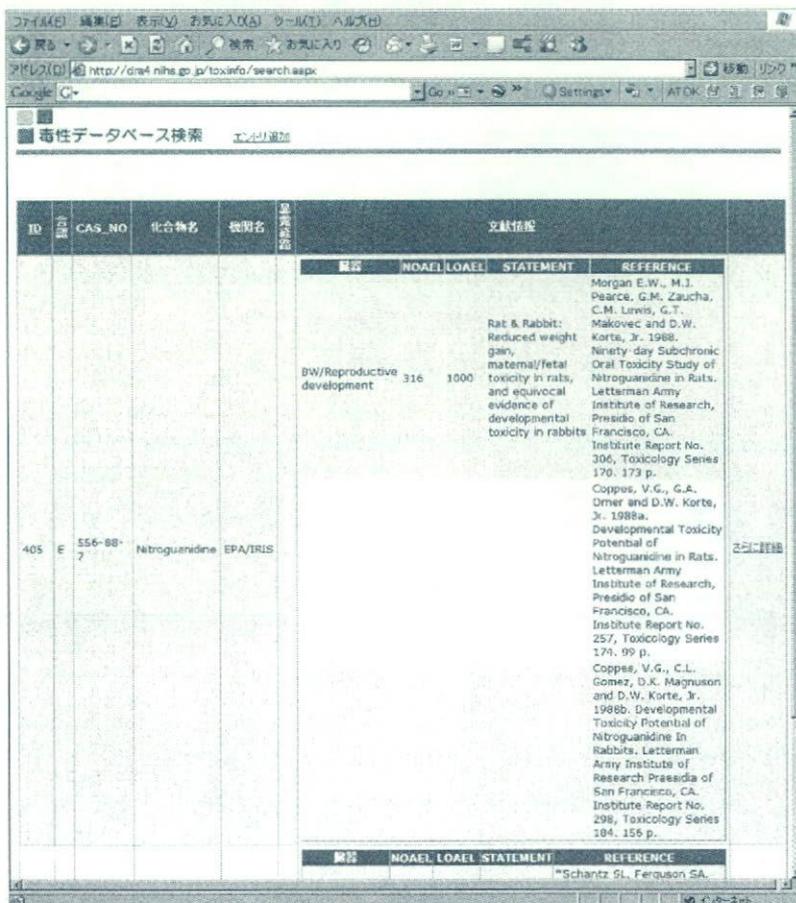


Fig. 109 検索結果画面

ファイル名 編集 表示 気に入る ツール ヘルプ

アドレス http://dra1.nih.go.jp/toxinfo/entry.asp?cid=405

Google Translate Settings ATOK

基本情報	塩化												
COMPOUND_ID	3053												
CAS_NO	556-80-7												
化合物名	Nitroguanidine												
機関名	EPA/IRIS												
暴露経路													
不確定係数	<table border="1"> <tr><td>全体</td><td>個人差</td><td>種差</td><td>LOAEL (Short-term)</td><td>Carcinogenicity</td><td>lack of data</td></tr> <tr><td>1000</td><td>10</td><td>10</td><td>10</td><td></td><td></td></tr> </table>	全体	個人差	種差	LOAEL (Short-term)	Carcinogenicity	lack of data	1000	10	10	10		
	全体	個人差	種差	LOAEL (Short-term)	Carcinogenicity	lack of data							
1000	10	10	10										
<table border="1"> <tr><td>その他</td><td>その理由</td><td>付加情報</td></tr> <tr><td>10x3</td><td>10 for less-than-lifetime NOAEL. 3 for equivocal evidence of developmental effects and data gaps</td><td></td></tr> </table>	その他	その理由	付加情報	10x3	10 for less-than-lifetime NOAEL. 3 for equivocal evidence of developmental effects and data gaps								
その他	その理由	付加情報											
10x3	10 for less-than-lifetime NOAEL. 3 for equivocal evidence of developmental effects and data gaps												
ADI (µg/kg体重/日)	TDI (µg/kg体重/日)	経口RfD (µg/kg体重/日)	吸入RfC (µg/cu.m)										
			100										
Oral Slope Factor	Air Unit Risk	Extrapolation Method											
File1													
File2													
Last Revised	02/01/1993												
NOAEL (LOAEL)換算値													
SMI													
SMI(T)													
コメント													

文献情報追加

文献情報 (1)	文献情報 (2)	文献情報 (3)
塩化		
暴露	BW/Reproductive development	
NOAEL (NOEL) mg/kg体重/日	215	
LOAEL (LOEL) mg/kg体重/日	1000	
論文	Rat & Rabbit: Reduced weight gain, maternal/fetal toxicity in rats, and equivocal evidence of developmental toxicity in rabbits	
文献情報	Morgan E.W., M.J. Pearce, G.M. Zaucha, C.M. Lewis, G.T. Makovic and D.W. Korte, Jr. 1998. Ninety-day Subchronic Oral Toxicity Study of Nitroguanidine in Rats. Letterman Army Institute of Research, Presidio of San Francisco, CA. Institute Report No. 306, Toxicology Series 170. 173 p.	

Fig. 110 詳細表示画面

ファイル名 編集 表示 気に入る ツール ヘルプ

アドレス http://dra1.nih.go.jp/toxinfo/edentry.asp

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CAS番号																	
化合物名																	
言語	<input checked="" type="radio"/> E <input type="radio"/> J																
データの有無	<input checked="" type="radio"/> あり <input type="radio"/> なし																
機関名																	
暴露経路																	
不確定係数	<table border="1"> <tr><td>全体</td><td>個人差</td><td>種差</td><td>その他</td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td>LOAEL</td><td>Short-term</td><td>Carcinogenicity</td><td>lack of data</td></tr> <tr><td></td><td></td><td></td><td></td></tr> </table>	全体	個人差	種差	その他					LOAEL	Short-term	Carcinogenicity	lack of data				
	全体	個人差	種差	その他													
LOAEL	Short-term	Carcinogenicity	lack of data														
その理由	付加情報																
ADI (µg/kg体重/日)																	
TDI (µg/kg体重/日)																	
経口RfD (µg/kg体重/日)																	
吸入RfC (µg/cu.m)																	
Oral Slope Factor																	
Air Unit Risk																	
Extrapolation Method																	
Last Revised																	
NOAEL (LOAEL)換算値																	
その他																	

Fig. 111 新規登録画面