Table 4-1

Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rats

Serum hormone levels in males

Group	LH (ng/mL)	FSH (ng/mL)	Prolactin (ng/mL)	Oestradiol (pg/mL)	Testosterone (ng/mL)	Corticosterone (ng/mL)
Control	10	10	10	2	10	9
	7.7	179	36	12	2.43	88
	1.1	38	18	–	1.50	140
25 mg/kg	10	10	10	3	10	10
	9.8	191	44	12	2.26	42
	3.8	38	21	2	1.17	47
100 mg/kg	10	10	10	3	4	10
	10.3	256 *	104 **	9	0.72	50
	3.2	51	37	4	0.59	53
400 mg/kg	10	10	10	1	3	8
	9.9	324 **	114 **	12	0.85	64
	2.5	107	66	–	0.63	69

Parameter, number of animals
mean
S.D.

*, significantly different from control, $p<0.05$
**, significantly different from control, $p<0.01$

Table 4-2

Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rats

Serum hormone levels in females

Group	LH	FSH	Prolactin	Oestradiol	Corticosterone
	(ng/mL)	(ng/mL)	(ng/mL)	(pg/mL)	(ng/mL)
Control	10	10	10	3	10
	6.1	249	39	26	176
	3.1	32	15	19	167
25 mg/kg	10	10	10	7	10
	6.7	317	47	16	163
	3.3	66	27	13	115
100 mg/kg	10	10	10	6	10
	5.9	349	218	14	62
	1.1	168	350	5	50
400 mg/kg	10	10	10	1	10
	6.3	394 **	122	9	141
	1.7	81	88	-	102

Parameter, number of animals
mean
S.D.

*, significantly different from control, $p<0.05$

**, significantly different from control, $p<0.01$

Table 5-1

Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rats

Hematological findings in males

Group	RBC	Hemoglobin	Hematocrit	MCV	MCH	MCHC	WBC	Band neutrophil	Segmented neutrophil	Eosinophil	Basophil	Monocyte	Lymphocyte	Platelet	PT
	(x10⁴/mm³)	(g/dL)	(%)	(μm³)	(pg)	(%)	(x100/mm³)	(%)	(%)	(%)	(%)	(%)	(%)	(x10⁴/mm³)	(sec)
Control	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
	720	14.2	40.8	56.6	19.8	35.0	106	0	11	1	0	1	87	96.2	10.8
	24	0.4	1.2	1.9	0.6	0.6	22	0	3	1	0	1	4	5.1	0.2
25 mg/kg	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	723	14.1	40.6	56.2	19.5	34.6	99	0	13	0	0	1	86	90.6	11.6 *
	24	0.3	0.8	1.6	0.6	0.4	36	0	4	0	0	1	4	11.0	0.6
100 mg/kg	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	710	13.8	39.5	55.7	19.5	34.9	71 *	0	8	1	0	2	89	89.8	12.3 **
	29	0.6	1.5	1.1	0.6	0.5	26	0	4	1	0	2	5	9.1	0.4
400 mg/kg	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	665 *	12.7 **	36.2 **	54.4 **	19.0 *	35.0	64 **	0	13	1	0	1	85	103.8	11.4
	55	0.9	2.5	1.3	0.6	0.4	20	0	8	1	0	1	9	9.3	1.1

Parameter, number of animals
mean
S.D.

*, significantly different from control, $p<0.05$
**, significantly different from control, $p<0.01$

Table 5-2

Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rats

Hematological findings in females

Group	RBC	Hemoglobin	Hematocrit	MCV	MCH	MCHC	WBC	Band neutrophil	Segmented neutrophil	Eosinophil	Basophil	Monocyte	Lymphocyte	Platelet	PT
	(x10⁴/mm³)	(g/dL)	(%)	(μm³)	(pg)	(%)	(x100/mm³)	(%)	(%)	(%)	(%)	(%)	(%)	(x10⁴/mm³)	(sec)
Control	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	723	13.5	40.5	56.1	18.7	33.3	61	0	9	1	0	1	90	96.3	10.7
	28	0.4	0.6	1.8	0.7	0.7	20	0	3	1	0	1	4	8.1	1.4
25 mg/kg	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9
	709	13.3	39.7	56.0	18.7	33.4	55	0	8	0	0	2	90	98.3	11.2
	22	0.4	1.3	2.1	0.8	0.6	14	0	5	1	0	2	5	7.2	0.4
100 mg/kg	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	680 **	12.6 **	37.4 **	55.1	18.6	33.7	57	0	6	1	0	2	91	85.4 *	11.5
	27	0.5	1.6	1.5	0.5	0.3	30	0	3	1	0	2	4	9.2	0.8
400 mg/kg	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	633 **	11.7 **	34.9 **	55.1	18.5	33.5	48	0	13	1	0	3	83 *	101.1	10.9
	31	0.5	1.8	1.8	0.6	0.6	12	0	5	1	0	2	8	11.3	0.8

Parameter, number of animals
mean
S.D.

*, significantly different from control, $p<0.05$
**, significantly different from control, $p<0.01$

Table 6-1

Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rats

Biochemical findings in males

Group	Total protein (g/dL)	Albumin (g/dL)	A/G	BUN (mg/dL)	Creatinine (mg/dL)	Glucose (mg/dL)	Total cholesterol (mg/dL)	Tri-glyceride (mg/dL)	ALP (U/L)	LDH (U/L)	GPT (U/L)	GOT (U/L)	γ-GTP (U/L)	Inorg. phos. (mg/dL)	Ca (mg/dL)	Na (mEq/L)	K (mEq/L)	Cl (mEq/L)
Control	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
	5.5	3.1	1.36	14	0.6	186	60	114	516	111	34	55	0	5.5	9.3	142.5	4.36	108.2
	0.2	0.1	0.17	2	0.0	11	9	56	126	29	5	9	0	0.6	0.3	1.3	0.28	2.1
25 mg/kg	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	5.3	3.0	1.27	14	0.6	176	40 **	145	584	110	33	51	0	5.6	9.2	142.7	4.32	107.9
	0.1	0.1	0.09	4	0.1	12	7	73	192	58	5	5	0	0.5	0.3	0.9	0.33	1.1
100 mg/kg	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	5.2	2.9 *	1.27	14	0.6	156 **	38 **	116	499	80	34	43 **	0	5.1	9.0	142.9	4.19	107.4
	0.3	0.2	0.12	2	0.1	8	8	62	137	23	5	3	0	1.0	0.4	1.4	0.27	2.1
400 mg/kg	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
	5.3	2.9 **	1.18 *	14	0.7 *	153 **	41 **	89	531	91	51 **	49	1 **	5.0	9.1	142.8	4.16	108.7
	0.3	0.3	0.12	3	0.1	12	10	49	139	34	7	5	0	0.9	0.5	1.9	0.40	1.9

Parameter, number of animals
mean
S.D.

*, significantly different from control, $p<0.05$
**, significantly different from control, $p<0.01$

Table 6-2

Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rats

Biochemical findings in females

Group	Total protein (g/dL)	Albumin (g/dL)	A/G	BUN (mg/dL)	Creatinine (mg/dL)	Glucose (mg/dL)	Total cholesterol (mg/dL)	Tri-glyceride (mg/dL)	ALP (U/L)	LDH (U/L)	GPT (U/L)	GOT (U/L)	γ-GTP (U/L)	Inorg. phos. (mg/dL)	Ca (mg/dL)	Na (mEq/L)	K (mEq/L)	Cl (mEq/L)
	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Control	5.6	3.5	1.64	19	0.6	161	63	56	320	67	27	50	0	5.5	8.9	142.6	3.94	109.6
	0.3	0.2	0.11	2	0.1	8	9	18	121	22	7	7	0	1.0	0.5	1.4	0.16	1.7
	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
25 mg/kg	5.3	3.0 *	1.33 **	19	0.7	158	47 **	63	281	75	23	49	0	5.2	8.4	143.7	3.96	110.8
	0.4	0.3	0.12	3	0.1	21	9	30	42	29	6	4	0	0.9	0.7	1.9	0.36	3.1
	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
100 mg/kg	5.0 **	2.7 **	1.22 **	17	0.6	140 **	35 **	106	433 *	77	22	46	1	4.6	8.2	144.0	3.83	111.1
	0.4	0.2	0.10	3	0.0	10	6	61	117	42	6	4	0	0.6	0.5	1.0	0.28	1.8
	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
400 mg/kg	5.6	3.1	1.25 **	21	0.7	137 **	43 **	110 *	366	105	36	46	1 **	4.3 **	8.9	142.8	3.88	109.8
	0.6	0.6	0.28	4	0.1	24	8	55	94	92	12	8	1	0.7	1.1	2.9	0.57	2.8

Parameter, number of animals
mean
S.D.

*, significantly different from control, $p<0.05$
**, significantly different from control, $p<0.01$

Table 7-1

Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rats

Absolute organ weights in males

Group	Body weight (g)	Liver (mg)	Kidneys (mg)	Adrenal glands (mg)	Pituitary gland (mg)	Thyroid gland (mg)	Prostate (mg)	Seminal vesicles (mg)	Testes (mg)	Epididymides (mg)	Accessory reproductive gland (mg)
Control	10	10	10	10	10	10	10	10	10	10	10
	420.0	16147.1	2624.6	54.1	10.1	15.0	468.2	1339.8	3277.6	931.9	2467.6
	18.5	1297.5	259.4	6.9	0.9	2.7	108.3	286.9	162.1	49.2	420.9
25 mg/kg	10	10	10	10	10	10	10	10	10	10	10
	401.7	15217.6	2661.9	50.4	10.8	16.7	462.3	1299.9	3085.8	873.8	2259.6
	22.7	1399.1	136.8	5.6	1.0	2.9	113.2	195.3	232.0	51.7	371.1
100 mg/kg	10	10	10	10	10	10	10	10	10	10	10
	312.1 **	12452.1 **	2097.1 **	54.8	9.0 *	13.5	146.9 **	272.9 **	2604.7 *	673.1 *	618.1 **
	29.2	1731.7	239.8	9.0	1.0	2.1	85.6	249.4	601.2	201.7	385.8
400 mg/kg	10	10	10	10	10	10	10	10	10	10	10
	307.0 **	14529.3 *	2257.6 **	65.3 **	9.1 *	13.4	61.7 **	82.4 **	1603.4 **	367.9 **	255.7 **
	20.2	1225.1	186.1	6.8	0.8	1.7	64.1	18.9	668.9	178.3	122.4

Parameter, number of animals
mean
S.D.

*, significantly different from control, $p<0.05$
**, significantly different from control, $p<0.01$

Table 7-2

Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rats

Absolute organ weights in females

Group	Body weight (g)	Liver (mg)	Kidneys (mg)	Adrenal glands (mg)	Pituitary gland (mg)	Thyroid gland (mg)	Uterus (mg)	Ovaries (mg)
Control	10	10	10	10	10	10	10	10
	264.4	9454.4	1722.6	62.9	14.3	12.8	379.2	84.9
	19.6	1015.1	129.8	9.8	1.3	1.5	79.9	10.2
25 mg/kg	10	10	10	10	10	10	10	10
	250.4	9314.5	1637.7	64.8	12.5 **	13.3	386.5	86.5
	15.8	964.7	113.4	6.7	1.1	1.8	77.3	12.4
100 mg/kg	10	10	10	10	10	10	10	10
	227.8 **	9470.8	1578.2	71.0	12.1 **	12.7	479.2	68.5 **
	15.4	956.1	152.0	7.7	1.0	4.3	174.0	9.4
400 mg/kg	10	10	10	10	10	10	10	10
	228.3 **	10838.6 **	1706.0	58.8	10.7 **	11.7	332.2	34.2 **
	16.0	818.4	325.8	6.0	1.0	1.3	51.8	4.7

Parameter, number of animals
mean
S.D.

**, significantly different from control, $p<0.01$

Table 8-1

Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rats

Relative organ weights in males

Group	Body weight (g)	Liver (mg/g)	Kidneys (mg/g)	Adrenal glands (mg/g)	Pituitary gland (mg/g)	Thyroid gland (mg/g)	Prostate (mg/g)	Seminal vesicles (mg/g)	Testes (mg/g)	Epididymides (mg/g)	Accessory reproductive gland (mg)
Control	10	10	10	10	10	10	10	10	10	10	10
	420.0	38.445	6.257	0.129	0.024	0.036	1.117	3.207	7.809	2.223	5.9
	18.5	2.589	0.636	0.019	0.002	0.007	0.266	0.760	0.357	0.165	1.1
25 mg/kg	10	10	10	10	10	10	10	10	10	10	10
	401.7	37.891	6.639	0.125	0.027 *	0.042	1.149	3.244	7.692	2.180	5.6
	22.7	2.891	0.411	0.012	0.002	0.007	0.265	0.523	0.555	0.165	0.9
100 mg/kg	10	10	10	10	10	10	10	10	10	10	10
	312.1 **	39.800	6.739	0.176 **	0.029 **	0.043 *	0.469 **	0.872 **	8.389	2.172	2.0 **
	29.2	2.728	0.701	0.025	0.002	0.006	0.272	0.751	1.887	0.671	1.2
400 mg/kg	10	10	10	10	10	10	10	10	10	10	10
	307.0 **	47.327 **	7.375 **	0.213 **	0.030 **	0.044 *	0.200 **	0.270 **	5.176 *	1.192 **	0.8 **
	20.2	2.271	0.684	0.014	0.003	0.007	0.213	0.065	2.072	0.572	0.4

Parameter, number of animals
mean
S.D.

*, significantly different from control, $p<0.05$
**, significantly different from control, $p<0.01$

Table 8-2

Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rats

Relative organ weights in females

Group	Body weight (g)	Liver (mg/g)	Kidneys (mg/g)	Adrenal glands (mg/g)	Pituitary gland (mg/g)	Thyroid gland (mg/g)	Uterus (mg/g)	Ovaries (mg/g)
	10	10	10	10	10	10	10	10
Control	264.4	35.710	6.524	0.238	0.054	0.049	1.436	0.322
	19.6	2.034	0.380	0.030	0.005	0.007	0.278	0.042
	10	10	10	10	10	10	10	10
25 mg/kg	250.4	37.149	6.542	0.259	0.050	0.053	1.554	0.345
	15.8	2.199	0.260	0.027	0.005	0.008	0.357	0.043
	10	10	10	10	10	10	10	10
100 mg/kg	227.8 **	41.521 **	6.924	0.314 **	0.053	0.055	2.133 *	0.300
	15.4	1.948	0.367	0.044	0.004	0.016	0.868	0.036
	10	10	10	10	10	10	10	10
400 mg/kg	228.3 **	47.535 **	7.521 *	0.258	0.047 **	0.052	1.460	0.151 **
	16.0	2.997	1.715	0.031	0.005	0.006	0.242	0.029

Parameter, number of animals
mean
S.D.

*, significantly different from control, $p<0.05$
**, significantly different from control, $p<0.01$

Table 9
Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rats

Sperm findings

Group	Sperm motility(%)	Caudal epididymal sperm counts (million)	Caudal epididymal sperm counts /caudal weight (million/g)	Testicular sperm head counts (million)	Testicular sperm head counts /testis weight (million/g)
Control	5 87.3 6.9	5 137.4 20.4	5 803.0 116.2	5 175.5 58.4	5 116.1 34.5
25 mg/kg	5 93.2 1.3	5 149.9 46.5	5 897.6 194.4	5 150.6 12.4	5 107.3 8.5
100 mg/kg	5 85.0 16.8	5 75.6 * 27.2	5 747.2 123.9	5 133.1 10.5	5 118.4 9.1
400 mg/kg	5 58.2 36.9	5 27.7 ** 38.4	5 300.0 ** 252.8	5 92.7 71.7	5 89.2 59.7

Parameter, number of animals
mean
S.D.

*, significantly different from control, $p<0.05$.
**, significantly different from control, $p<0.01$.

Table 9 (continued)
Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rats

Sperm findings

Group	Total number of sperm examined	Total number of abnormal sperm	Sperm morphological abnormality(%) mean S.D.	Abnormal sperm; types and frequencies (N)									
				Pin head	Amor-phous	Short head	Banana head	Reduced hook	No hook	Bent flagellum	Coiled flagellum	Broken flagellum	Detached flagellum
Control	1000	49	4.9 3.0	0.10 (1)	0.10 (1)	0.30 (3)	0.10 (1)	0.60 (6)	0.20 (2)	0.30 (3)	0.10 (1)	0.60 (6)	2.50 (25)
25 mg/kg	1000	50	5.0 1.7	0.30 (3)	0.30 (3)	0 (0)	0 (0)	0.80 (8)	0.10 (1)	0.10 (1)	0.30 (3)	0.40 (4)	2.70 (27)
100 mg/kg	1000	59	5.9 3.6	0.20 (2)	0.50 (5)	0 (0)	0 (0)	1.60 (16)	0 (0)	0 (0)	0.60 (6)	0.60 (6)	2.40 (24)
400 mg/kg	975	200	21.7 25.4	0.30 (3)	0.10 (1)	0 (0)	0 (0)	1.23 (12)	0.10 (1)	1.01 (10)	0.50 (5)	3.59 (32)	14.82 (136)

*, significantly different from control, $p<0.05$.
**, significantly different from control, $p<0.01$.

Table 10-1

Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rat

Summary of macroscopic findings in males

Group		Control		25 mg/kg		100 mg/kg		400mg/kg	
Grade		-	+	-	+	-	+	-	+
(Testis)	[10]			[10]		[10]		[10]	
	Small	10	0	10	0	5	5	2	8
(Epididymis)	[10]			[10]		[10]		[10]	
	Small	10	0	10	0	5	5	2	8
	Nodule, cauda, unilateral	10	0	10	0	9	1	10	0
(Prostate)	[10]			[10]		[10]		[10]	
	Small	10	0	10	0	1	9	1	9
(Seminal vesicle)	[10]			[10]		[10]		[10]	
	Small	10	0	10	0	1	9	0	10
	Area, edematous, unilateral	10	0	10	0	9	1	10	0
(Lung)	[10]			[10]		[10]		[10]	
	Spot, dark red	9	1	10	0	10	0	10	0
(Liver)	[10]			[10]		[10]		[10]	
	Diaphragmatic nodule	9	1	10	0	10	0	10	0
(Kidney)	[10]			[10]		[10]		[10]	
	Dilatation, renal pelvis, unilateral	8	2	10	0	10	0	10	0
	Area, pale, tessellated	10	0	10	0	10	0	9	1

-, negative; +, positive

[ ], Number of animals examined

Table 10-2
Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rat
Summary of macroscopic findings in females

Group		Control		25 mg/kg		100 mg/kg		400 mg/kg	
Grade		−	+	−	+	−	+	−	+
(Ovary)		[10]		[10]		[10]		[10]	
	Small	10	0	10	0	10	0	8	2
(Uterus)		[10]		[10]		[10]		[10]	
	Dilatation, lumen	10	0	10	0	9	1	10	0
	Cyst, horn, unilateral	10	0	10	0	10	0	9	1
(Adrenal gland)		[10]		[10]		[10]		[10]	
	Pale	10	0	10	0	10	0	9	1
(Kidney)		[10]		[10]		[10]		[10]	
	Enlargement	10	0	10	0	10	0	9	1
	Area, pale, cortex	10	0	10	0	10	0	9	1
	Soft	10	0	10	0	10	0	9	1
	Adhesion, capsule, unilateral	9	1	10	0	10	0	10	0
(Skin)		[10]		[10]		[10]		[10]	
	Alopecia	10	0	10	0	9	1	8	2
	Soiled perineal region	10	0	10	0	10	0	9	1

−, Negative, +, Positive
[ ], Number of animals examined

Table 11-1
Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rats
Summary of histopathological findings in males

Group	Control							25 mg/kg							100 mg/kg							400 mg/kg						
Grade	-	±	+	++	+++	Pos		-	±	+	++	+++	Pos		-	±	+	++	+++	Pos		-	±	+	++	+++	Pos	
(Testis)	[10]						[10]							[10]							[10]							
Atrophy, seminiferous tubule	10	0	0	0	0	0		8	2	0	0	0	2		3	6	1	0	0	** 7	##	0	5	1	4	0	** 10	##
Necrosis/degeneration, spermatocyte, in seminiferous tubule	10	0	0	0	0	0		10	0	0	0	0	0		3	3	4	0	0	** 7	##	0	0	5	5	0	** 10	##
Decrease, spermatid, in seminiferous tubule	10	0	0	0	0	0		10	0	0	0	0	0		7	2	0	1	0	3		4	0	1	2	3	* 6	##
Degeneration, spermatid, in seminiferous tubule	10	0	0	0	0	0		10	0	0	0	0	0		7	2	1	0	0	3		5	1	3	1	0	5	*
Decrease, sperm, in seminiferous tubule	10	0	0	0	0	0		10	0	0	0	0	0		7	2	1	0	0	3		4	0	1	1	4	* 6	##
Multinucleated giant cell, in seminiferous tubule	10	0	0	0	0	0		9	1	0	0	0	1		9	1	0	0	0	1		8	2	0	0	0	2	
Vacuolization, germ cell layer in seminiferous tubule	10	0	0	0	0	0		10	0	0	0	0	0		9	0	1	0	0	1		5	0	0	5	0	5	#
Atrophy, Leydig cell, diffuse	10	0	0	0	0	0		10	0	0	0	0	0		0	3	7	0	0	** 10	##	0	0	5	5	0	** 10	##
Cellular infiltration, lymphocyte, perivascular, focal	10	0	0	0	0	0		10	0	0	0	0	0		9	1	0	0	0	1		10	0	0	0	0	0	
(Epididymis)	[10]						[10]							[10]							[10]							
Decrease, sperm, in lumen	10	0	0	0	0	0		10	0	0	0	0	0		6	1	2	1	0	4	#	3	0	0	3	4	** 7	##
Cell debris, in lumen	10	0	0	0	0	0		10	0	0	0	0	0		7	2	0	1	0	3		2	1	4	3	0	** 8	##
Spermatic granuloma, unilateral	10	0	0	0	0	0		10	0	0	0	0	0		9	0	0	1	0	1		10	0	0	0	0	0	
(Prostate Ventral & Dorsolateral lobe)	[10]						[10]							[10]							[10]							
Atrophy, with decreased secretion	10	0	0	0	0	0		10	0	0	0	0	0		0	3	5	2	0	** 10	##	0	0	1	4	5	** 10	##
Cellular infiltration, lymphocyte, interstitium	7	2	1	0	0	3		6	1	3	0	0	4		8	1	1	0	0	2		10	0	0	0	0	0	
Cellular infiltration, lymphocyte and plasma cell, epithelial layer	7	3	0	0	0	3		8	2	0	0	0	2		10	0	0	0	0	0		10	0	0	0	0	0	
(Seminal vesicle)	[10]						[10]							[10]							[10]							
Atrophy, with decreased secretion	10	0	0	0	0	0		10	0	0	0	0	0		1	1	2	5	1	** 9	##	0	0	1	2	7	** 10	##
(Mammary gland)	[6]						[10]							[10]							[6]							
Atrophy	6	0	0	0	0	0		10	0	0	0	0	0		1	0	2	7	0	** 9	##	0	0	2	2	4	** 8	##
(Adrenal gland)	[10]						[10]							[10]							[10]							
Hypertrophy, cortical cell	10	0	0	0	0	0		10	0	0	0	0	0		4	5	1	0	0	* 6	##	0	7	3	0	0	** 10	##

- Negative; ±, Very slight; +, Slight; ++, Moderate; +++, Severe; Pos., Total of positive grade
[ ] Number of animals examined
*, Significantly different from control p<0.05 (Two-tailed Mann-Whitney U test)
**, Significantly different from control p<0.01 (Two-tailed Mann-Whitney U test)
#, Significantly different from control p<0.05 (One-tailed Fisher exact test)
##, Significantly different from control p<0.01 (One-tailed Fisher exact test)

Table 11-1 (continued)
Twenty-eight-day repeat dose oral toxicity study of methoxychlor in rats
Summary of histopathological findings in males

Group	Control							25 mg/kg							100 mg/kg							400 mg/kg							
Grade	-	±	+	++	+++	Pos		-	±	+	++	+++	Pos		-	±	+	++	+++	Pos		±	±	+	++	+++		Pos	
(Kidney)	[10]							[10]							[10]							[10]							
Eosinophilic body	9	1	0	0	0	1		9	0	1	0	0	1		9	0	1	0	0	1		10	0	0	0	0		0	
Basophilic tubule cortex	4	6	0	0	0	6		7	3	0	0	0	3		8	2	0	0	0	2		0	3	4	2	1	**	10	#
Basophilic tubule medulla	10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0		8	0	2	0	0		2	
Degeneration, vacuolar epithelium proximal tubule	10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0		0	4	6	0	0	**	10	##
Dilatation, distal tubule cortex	10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0		4	4	1	1	0	*	5	##
Dilatation, collecting tubule medulla/papilla	10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0		7	1	1	1	0		3	
Cell debris, distal tubule cortex	10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0		3	5	2	0	0	**	7	##
Cell debris, collecting tubule medulla/papilla	10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0		7	1	2	0	0		3	
Cellular infiltration, neutrophil, lumen, distal/collecting tubule	10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0		8	1	1	0	0		2	
Cellular infiltration neutrophil, papilla	10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0		9	1	0	0	0		1	
Mineralization, papilla	10	0	0	0	0	0		9	1	0	0	0	1		9	1	0	0	0	1		7	3	0	0	0		3	
Dilatation, renal pelvis	8	1	1	0	0	2		10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	0		0	
(Liver)	[10]							[10]							[10]							[10]							
Hypertrophy, hepatocyte centrilobular	10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0		0	5	5	0	0	**	10	##
Degeneration, fatty, focal	9	1	0	0	0	1		10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	0		0	
Necrosis, focal	10	0	0	0	0	0		9	1	0	0	0	1		10	0	0	0	0	0		10	0	0	0	0		0	
Fibrosis, capsule, focal, on diaphragmatic nodule	9	1	0	0	0	1		10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	0		0	
(Spleen)	[10]							[10]							[10]							[10]							
Hematopoiesis, extramedullary	0	7	3	0	0	10		1	6	3	0	0	9		0	6	4	0	0	10		0	9	1	0	0		10	
Deposit, pigment, brown	0	10	0	0	0	10		1	9	0	0	0	9		0	6	4	0	0	10		0	9	1	0	0		10	
(Lung & Bronchus)	[10]							[10]							[10]							[10]							
Accumulation, foam cell	5	4	1	0	0	5		5	5	0	0	0	5		5	4	1	0	0	5		3	6	1	0	0		7	
Mineralization, artery	8	2	0	0	0	2		7	3	0	0	0	3		8	2	0	0	0	2		7	3	0	0	0		3	
Hemorrhage, focal	9	1	0	0	0	1		10	0	0	0	0	0		9	1	0	0	0	1		10	0	0	0	0		0	
Cellular infiltration, neutrophil & lymphocyte focal	9	1	0	0	0	1		10	0	0	0	0	0		8	2	0	0	0	2		10	0	0	0	0		0	
Cellular infiltration eosinophil	10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0		9	1	0	0	0		1	
(Heart)	[10]							[10]							[10]							[10]							
Myocardial degeneration/fibrosis focal	9	1	0	0	0	1		10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	0		0	
(Thyroid gland)	[10]							[10]							[10]							[10]							
Ectopic thymic tissue	9	1	0	0	0	1		10	0	0	0	0	0		10	0	0	0	0	0		9	1	0	0	0		1	

- Negative, ± Very slight, + Slight, ++ Moderate, +++ Severe, Pos Total of positive grade
[ ] Number of animals examined
* Significantly different from control p<0.05 (Two-tailed Mann-Whitney U test)
** Significantly different from control p<0.01 (Two-tailed Mann-Whitney U test)
# Significantly different from control p<0.05 (One-tailed Fisher exact test)
Significantly different from control p<0.01 (One-tailed Fisher exact test)

Table 11-2
Twenty-eight day repeat dose oral toxicity study of methoxychlor in rats
Summary of histopathological findings in females

Group	Control						25 mg/kg						100 mg/kg						400 mg/kg						
Grade	-	±	+	++	+++	Pos.	-	±	+	++	+++	Pos.	-	±	+	++	+++	Pos.	-	±	+	++	+++		Pos.
(Ovary)	[10]						[10]						[10]						[10]						
Decrease, corpus luteum	10	0	0	0	0	0	10	0	0	0	0	0	7	1	1	1	0	3	0	3	3	3	1	**	10 ##
Increase, stresa, follicle	9	1	0	0	0	1	9	1	0	0	0	1	6	2	2	0	0	4	0	3	3	4	0	**	10 ##
Follicular cyst	8	1	1	0	0	2	10	0	0	0	0	0	9	1	0	0	0	1	10	0	0	0	0		0
Mineralization, degenerated oocyte	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	8	2	0	0	0		2
(Uterus: horn & cervix)	[10]						[10]						[10]						[10]						
Hypertrophy, luminal epithelial cell	10	0	0	0	0	0	10	0	0	0	0	0	5	0	3	2	0	5 #	0	0	0	10	0	**	10 ##
Mitosis, luminal epithelial cell	1	4	2	3	0	9	3	4	3	0	0	7	1	2	5	2	0	9	9	0	1	0	0	**	1 ##
Vacuolation, with cell debris, luminal epithelium	0	9	0	1	0	10	0	10	0	0	0	10	3	3	4	0	0	7	0	0	4	6	0	**	10
Vacuolation, with cell debris, glandular epithelium	2	7	1	0	0	8	0	10	0	0	0	10	0	6	4	0	0	10	0	0	0	10	0	**	10
Dilatation, lumen, uterus	9	0	1	0	0	1	9	1	0	0	0	1	1	2	4	3	0	9 #	8	1	1	0	0		2
Cyst, gland, serosa	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	9	0	0	1	0		1
Cellular infiltration, eosinophil, endometrium & myometrium	0	0	6	3	1	10	0	0	2	8	0	10	0	1	0	9	0	10	0	0	8	1	1		10
Cellular infiltration, lymphocyte, endometrium	10	0	0	0	0	0	9	1	0	0	0	1	10	0	0	0	0	0	10	0	0	0	0		0
Metaplasia, squamous, luminal epithelium	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	9	1	0	0	0		1
(Vagina)	[9]						[10]						[9]						[10]						
Cornification, epithelium	9	0	0	0	0	0	7	3	0	0	0	3	8	0	1	0	0	1	0	3	6	1	0	**	10 ##
Mucification, epithelium	9	0	0	0	0	0	10	0	0	0	0	0	4	3	0	2	0	5 #	8	2	0	0	0		2
Increase, thickness, epithelial layer	8	1	0	0	0	1	10	0	0	0	0	0	4	3	0	2	0	5	0	0	2	7	1	**	10 ##
Cellular infiltration, neutrophil, epithelium	0	2	3	3	1	9	0	0	0	10	0	10	2	2	5	0	0	7	6	2	2	0	0	**	4 ##
(Adrenal gland)	[10]						[10]						[10]						[10]						
Hypertrophy, cortical cell	9	1	0	0	0	1	9	1	0	0	0	1	3	7	0	0	0	* 7 ##	0	2	8	0	0	**	10 ##

- Negative ± Very slight, + Slight, ++, Moderate, +++, Severe, Pos., Total of positive grade
[ ] Number of animals examined
*, Significantly different from control p<0.05 (Two-tailed Mann-Whitney U test)
**, Significantly different from control p<0.01 (Two-tailed Mann-Whitney U test)
#, Significantly different from control p<0.05 (One-tailed Fisher exact test)
##, Significantly different from control p<0.01 (One-tailed Fisher exact test)

Table 11-2 (continued)
Twenty-eight day repeat dose oral toxicity study of methoxychlor in rats
Summary of histopathological findings in females

Group	Control						25 mg/kg						100 mg/kg						400 mg/kg						
Grade	-	±	+	++	+++	Pos	-	±	+	++	+++	Pos	-	±	+	++	+++	Pos	-	±	+	++	+++		Pos	
(Kidney)	[10]						[10]						[10]						[10]							
Basophilic tubule, cortex	5	5	0	0	0	5	8	2	0	0	0	2	4	6	0	0	0	6	1	5	3	1	0	*	9	
Basophilic tubule, medulla	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	7	2	0	1	0		3	
Degeneration, vacuolar, epithelium, proximal tubule	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	1	7	2	0	0	**	9	##
Dilatation, proximal tubule, cortex	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	9	0	1	0	0		1	
Dilatation, distal tubule, cortex	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	1	7	1	1	0	**	9	##
Dilatation, collecting tubule, medulla/papilla	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	7	2	0	1	0		3	
Cell debris, distal tubule, cortex	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	3	5	1	1	0	**	7	##
Cell debris, collecting tubule, medulla/papilla	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	6	3	1	0	0		4	#
Cellular infiltration, neutrophil, lumen, distal/collecting tubule	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	8	1	1	0	0		2	
Cellular infiltration, neutrophil, papilla	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	9	0	1	0	0		1	
Mineralization, cecal's	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	9	1	0	0	0		1	
Mineralization, cortex	10	0	0	0	0	0	10	0	0	0	0	0	9	1	0	0	0	1	10	0	0	0	0		0	
Cellular infiltration, lymphocyte, interstitium	10	0	0	0	0	0	10	0	0	0	0	0	9	1	0	0	0	1	10	0	0	0	0		0	
(Liver)	[10]						[10]						[10]						[10]							
Hypertrophy, hepatocyte, centrilobular	10	0	0	0	0	0	10	0	0	0	0	0	5	5	0	0	0	5 #	0	2	5	3	0	**	10	##
(Spleen)	[10]						[10]						[10]						[10]							
Hematopoiesis, extramedullary	0	5	5	0	0	10	0	2	8	0	0	10	0	1	8	1	0	10	0	4	6	0	0		10	
Deposit, pigment, brown	0	0	10	0	0	10	0	1	9	0	0	10	0	2	8	0	0	10	0	1	9	0	0		10	
(Lung & Bronchus)	[10]						[10]						[10]						[10]							
Accumulation, foam cell	8	1	1	0	0	2	4	6	0	0	0	6	5	5	0	0	0	5	6	4	0	0	0		4	
Mineralization, artery	9	1	0	0	0	1	9	1	0	0	0	1	9	1	0	0	0	1	9	1	0	0	0		1	
Hemorrhage, focal	10	0	0	0	0	0	10	0	0	0	0	0	9	1	0	0	0	1	8	2	0	0	0		2	
Cellular infiltration, neutrophil & lymphocyte, focal	9	0	1	0	0	1	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0		0	
Metaplasia, osseous	10	0	0	0	0	0	8	2	0	0	0	2	10	0	0	0	0	0	9	1	0	0	0		1	
Fibrosis, focal, pleura	10	0	0	0	0	0	9	1	0	0	0	1	10	0	0	0	0	0	10	0	0	0	0		0	
(Thyroid gland)	[10]						[10]						[10]						[10]							
Ectopic thymic cell	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	8	1	1	0	0		2	

- Negative ± Very slight, + Slight, ++ Moderate +++ Severe Pos, Total of positive grade
[ ] Number of animals examined
* Significantly different from control p<0.05 (Two-tailed Mann-Whitney U test)
** Significantly different from control p<0.01 (Two-tailed Mann-Whitney U test)
# Significantly different from control p<0.05 (One-tailed Fisher exact test)
Significantly different from control p<0.01 (One-tailed Fisher exact test)

Photo 1 A microphotography of the testis from the male animal of methoxychlor, control group (Animal No. 4) showing no abnormality in seminiferous tubule. x 170, Hematoxylin-eosin stain.

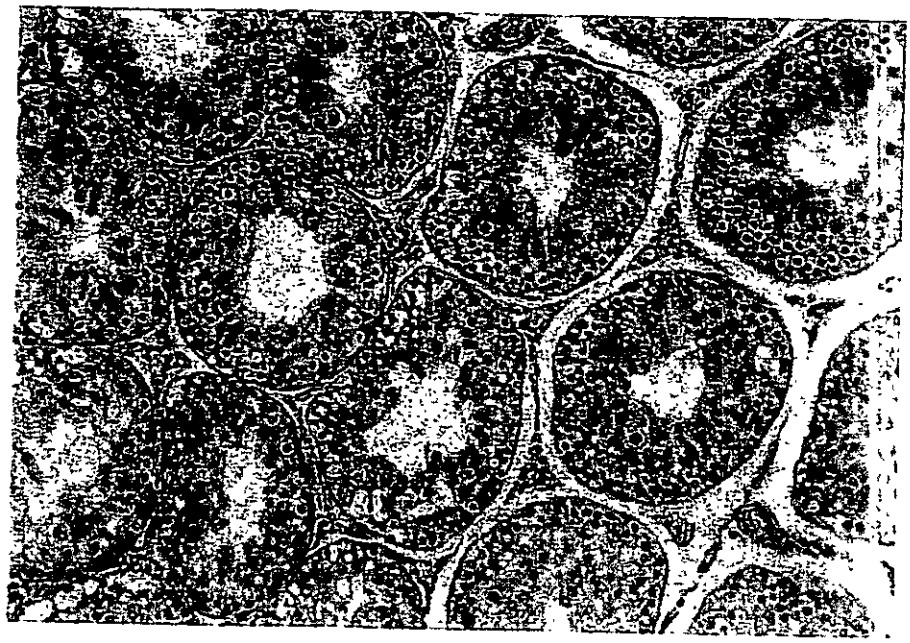

Photo 2 A microphotography of the testis from the male animal of metoxyclor, 400 mg/kg group (Animal No. 38) showing necrosis/degeneration of spermatocyte, degeneration of spermatid, vacuolization of germ cell layer, decrease of spermatid and sperm in atrophic seminiferous tubule, with atrophy of leydig cell. x 170, Hematoxylin-eosin stain.

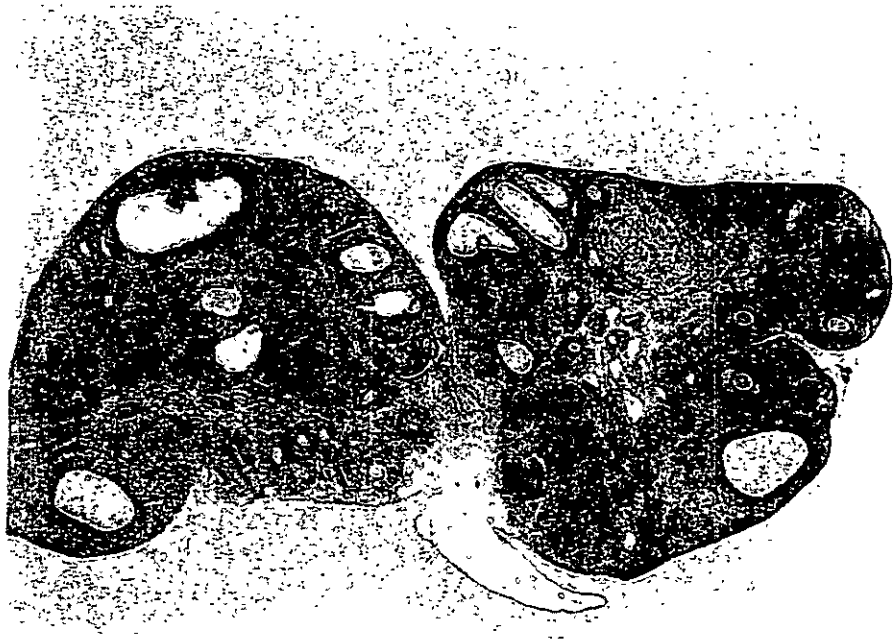

Photo 3 A microphotography of the ovary from the female animal of methoxychlor, 400 mg/kg control group (Animal No. 80) showing decrease of corpus luteum and increase of follicle with atresia. x 35, Hematoxylin-eosin stain.

Photo 4 A microphotography of the uterus from the female animal of methoxychlor, 400 mg/kg group (Animal No. 80) showing hypertrophy of luminal eoithelial cell. x 35, Hematoxylin-eosin stain.