

Table 4. Hematological data of male and female rats treated with methyltestosterone for 28-31 days

Dose level	0 mg/kg	5 mg/kg	20 mg/kg	80 mg/kg
[Male]	(10) ^a	(9)	(10)	(10)
WBC ($\times 10^2/\mu\text{l}$)	77.9 $\pm$ 17.4	84.9 $\pm$ 16.9	86.5 $\pm$ 17.4	69.1 $\pm$ 10.7
RBC ($\times 10^4/\mu\text{l}$)	781 $\pm$ 39	781 $\pm$ 41	773 $\pm$ 29	776 $\pm$ 42.1
HGB (g/dl)	14.7 $\pm$ 0.5	14.6 $\pm$ 0.4	14.5 $\pm$ 0.4	14.4 $\pm$ 0.6
HCT (%)	42.5 $\pm$ 1.9	43.1 $\pm$ 0.9	42.2 $\pm$ 1.3	42.2 $\pm$ 2.5
MCV (fl)	54.5 $\pm$ 1.1	55.4 $\pm$ 2.6	54.6 $\pm$ 1.5	54.3 $\pm$ 1.4
MCH (pg)	18.8 $\pm$ 0.5	18.7 $\pm$ 0.8	18.8 $\pm$ 0.5	18.6 $\pm$ 0.7
MCHC (g/dl)	34.5 $\pm$ 0.4	33.8 $\pm$ 0.4	34.5 $\pm$ 0.6	34.1 $\pm$ 0.9
PLT ($\times 10^4/\mu\text{l}$)	109 $\pm$ 15	105 $\pm$ 14	106 $\pm$ 12	110 $\pm$ 10
[Female]	(10)	(10)	(9)	(9)
WBC ($\times 10^2/\mu\text{l}$)	66.5 $\pm$ 22.9	74.3 $\pm$ 21.4	122 $\pm$ 158	72.9 $\pm$ 17.0
RBC ($\times 10^4/\mu\text{l}$)	715 $\pm$ 44	748 $\pm$ 37	737 $\pm$ 27	724 $\pm$ 26
HGB (g/dl)	13.8 $\pm$ 0.7	14.2 $\pm$ 0.7	14.3 $\pm$ 0.4	13.9 $\pm$ 0.5
HCT (%)	39.5 $\pm$ 1.8	41.0 $\pm$ 2.2	42.0 $\pm$ 2.0	40.6 $\pm$ 1.9
MCV (fl)	55.3 $\pm$ 1.9	54.8 $\pm$ 1.9	57.0 $\pm$ 2.4	56.0 $\pm$ 1.1
MCH (pg)	19.4 $\pm$ 0.7	19.0 $\pm$ 0.5	19.4 $\pm$ 0.8	19.2 $\pm$ 0.5
MCHC (g/dl)	35.0 $\pm$ 0.5	34.8 $\pm$ 0.5	34.0 $\pm$ 1.2	34.4 $\pm$ 0.6
PLT ($\times 10^4/\mu\text{l}$)	117 $\pm$ 14	99 $\pm$ 25	100 $\pm$ 13	103 $\pm$ 13

^a: Numbers in parentheses represent the numbers of rats examined.

Data represent mean values $\pm$ S.D.

Table 5. Differential leukocyte counts of male and female rats treated with flutamide for 28-31 days

Dose level	0 mg/kg	0.25 mg/kg	1 mg/kg	4 mg/kg
[Male]	(10) ^a	(10)	(10)	(10)
Band form-N (%)	1.4±1.3	1.4±1.1	1.2±0.8	0.8±0.5
Segmented-N (%)	12.2±4.3	10.1±4.5	9.4±3.7	9.8±2.5
Eosinophils (%)	1.2±1.0	1.3±1.0	1.1±0.9	1.4±1.2
Basophils (%)	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0
Lymphocytes (%)	84.9±4.3	87.0±5.4	88.0±4.0	87.7±3.1
Monocytes (%)	0.2±0.3	0.1±0.2	0.1±0.3	0.2±0.4
[Female]	(10) ^a	(10)	(10)	(10)
Band form-N (%)	1.8±1.2	1.6±0.8	1.3±1.3	0.8±1.1
Segmented-N (%)	9.8±4.3	10.1±3.7	8.0±3.8	9.3±5.5
Eosinophils (%)	1.1±1.1	1.1±0.7	1.1±1.3	1.1±0.7
Basophils (%)	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0
Lymphocytes (%)	87.2±5.7	87.3±4.4	89.5±4.6	88.6±6.0
Monocytes (%)	0.1±0.2	0.1±0.2	0.1±0.2	0.1±0.3

Band form-N : band form neutrophils, Segmented-N : segmented neutrophils.

a : numbers in parentheses represent the numbers of rats examined.

Data represent mean values ± S.D.

Table 6. Differential leukocyte counts of male and female rats treated with methyltestosterone for 28-31 days

Dose level	0 mg/kg	5 mg/kg	20 mg/kg	80 mg/kg
[Male]	(10) ^a	(9)	(10)	(10)
Band form-N (%)	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Segmented-N (%)	13.5 ± 5.7	10.2 ± 2.3	12.7 ± 3.5	10.7 ± 1.1
Eosinophils (%)	0.7 ± 0.7	0.2 ± 0.4	0.8 ± 0.7	0.6 ± 0.6
Basophils (%)	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Lymphocytes (%)	85.8 ± 5.5	89.6 ± 2.4	86.5 ± 3.5	88.5 ± 1.5
Monocytes (%)	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.3 ± 0.4 *
[Female]	(10) ^a	(10)	(9)	(10)
Band form-N (%)	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Segmented-N (%)	11.1 ± 5.0	10.7 ± 4.0	7.1 ± 3.1	8.7 ± 3.0
Eosinophils (%)	0.7 ± 0.6	0.5 ± 0.7	0.6 ± 0.6	0.5 ± 0.4
Basophils (%)	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Lymphocytes (%)	88.2 ± 4.9	88.9 ± 4.3	92.3 ± 3.3	90.8 ± 3.2
Monocytes (%)	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0

Band form-N : band form neutrophils, Segmented-N : segmented neutrophils.

^a : Numbers in parentheses represent the numbers of rats examined.

Data represent mean values ± S.D.

* Significantly different from the 0 mg/kg group at p<0.05.

Table 7. Serum biochemical data of male rats treated with flutamide for 28 days

Dose level	0 mg/kg	0.25 mg/kg	1 mg/kg	4 mg/kg
	(10) ^a	(10)	(10)	(10)
Total protein (g/dl)	6.19±0.33	6.07±0.24	6.18±0.23	6.19±0.31
Albumin/globulin ratio	2.55±0.37	2.56±0.28	2.51±0.26	2.49±0.38
Albumin (g/dl)	4.42±0.19	4.35±0.05	4.40±0.19	4.39±0.22
Total cholesterol (mg/dl)	70.7±6.5	70.5±9.7	63.7±9.5	75.1±12.5
BUN (mg/dl)	15.81±1.66	15.83±1.54	15.48±2.24	15.67±1.01
Creatinine (mg/dl)	0.21±0.03	0.23±0.05	0.24±0.05	0.25±0.05
Ca (mg/dl)	10.32±0.38	10.29±0.24	10.14±0.26	9.62±2.29
P (mg/dl)	8.35±0.87	7.76±0.84	7.39±0.49	8.19±1.14
Na (mEQ/l)	148.5±2.0	148.3±1.4	147.1±1.2	147.1±2.8
Cl (mEQ/l)	108.9±1.8	108.4±2.1	107.0±1.3	107.7±1.6
K (mEQ/l)	5.29±0.28	5.18±0.35	5.11±0.47	5.66±1.60
GOT (IU/l/37°C)	103.3±29.3	114.3±27.5	115.8±23.9	115.5±22.0
GPT (IU/l/37°C)	41.0±5.3	40.4±6.0	39.6±6.3	40.1±5.1
ALP (IU/l/37°C)	657.5±187.8	727.3±205.5	732.9±232.7	645.3±126.8
γ-GTP (IU/l/37°C)	<2	<2	<2	<2

a : numbers in parentheses represent the numbers of rats examined.
Data represent mean values ± S.D.

Table 8. Serum biochemical data of female rats treated with flutamide for 28-31 days

Dose level	0 mg/kg (10) ^a	0.25 mg/kg (10)	1 mg/kg (10)	4 mg/kg (10)
Total protein (g/dl)	6.31±0.31	6.33±0.38	6.26±0.25	6.55±0.31
Albumin/globulin ratio	3.44±0.32	3.37±0.55	3.47±0.59	3.24±0.40
Albumin (g/dl)	4.88±0.22	4.86±0.29	4.83±0.15	4.99±0.27
Total cholesterol (mg/dl)	78.3±12.1	70.3±9.2	77.3±8.1	72.9±12.5
BUN (mg/dl)	16.94±4.41	16.73±3.50	16.59±3.35	18.25±3.90
Creatinine (mg/dl)	0.29±0.03	0.29±0.06	0.29±0.06	0.30±0.00
Ca (mg/dl)	10.39±0.22	10.47±0.29	10.35±0.18	10.45±0.32
P (mg/dl)	7.40±1.08	7.70±0.77	7.62±0.72	7.66±0.94
Na (mEQ/l)	147.8±1.6	147.4±1.6	147.9±1.3	148.6±1.6
Cl (mEQ/l)	109.3±1.8	108.9±2.0	109.8±1.7	109.4±1.3
K (mEQ/l)	4.31±0.27	4.50±0.16	4.55±0.21	4.55±0.33
GOT (IU/l/37°C)	86.8±18.9	88.6±12.9	91.2±12.8	88.8±17.4
GPT (IU/l/37°C)	37.3±6.2	36.1±4.5	40.2±6.5	37.5±5.2
ALP (IU/l/37°C)	387.0±89.4	396.4±149.4	401.4±59.5	452.9±130.1
γ-GTP (IU/l/37°C)	<2	<2	<2	<2

a : numbers in parentheses represent the numbers of rats examined.
Data represent mean values ± S.D.

Table 9. Serum biochemical data of male rats treated with methyltestosterone for 28 days

Dose level	0 mg/kg	5 mg/kg	20 mg/kg	80 mg/kg
	(10) ^a	(9)	(10)	(10)
Total protein (g/dl)	5.97±0.32	6.01±0.23	6.02±0.36	6.17±0.50
Albumin/globulin ratio	2.61±0.46	2.53±0.57	2.40±0.29	2.28±0.40
Albumin (g/dl)	4.27±0.14	4.26±0.15	4.23±0.18	4.25±0.20
Total cholesterol (mg/dl)	71.4±8.6	69.2±10.0	57.5±10.9	46.9±9.4
BUN (mg/dl)	13.8±1.8	15.6±0.7	14.3±1.5	15.4±3.9
Creatinine (mg/dl)	0.22±0.04	0.23±0.05	0.25±0.05	0.22±0.04
Ca (mg/dl)	10.3±0.2	10.4±0.3	10.1±0.2	10.1±0.3
P (mg/dl)	8.79±0.91	8.77±1.03	8.45±1.20	8.43±0.97
Na (mEQ/l)	148±2	147±1	147±1	147±1
Cl (mEQ/l)	108±1	107±1	108±1	107±2
K (mEQ/l)	5.09±0.28	4.99±0.16	4.98±0.26	4.93±0.36
GOT (IU/l/37°C)	103.6±20.9	91.4±16.0	97.0±15.0	108.4±25.4
GPT (IU/l/37°C)	43.8±4	41.0±4.3	41.4±5.1	49.3±6.9
ALP (IU/l/37°C)	795±314	743±122	720±161	974±156
γ-GTP (IU/l/37°C)	<2	<2	<2	<2

^a. Numbers in parentheses represent the numbers of rats examined.

Data represent mean values ± S.D.

Table 10. Serum biochemical data of female rats treated with methyltestosterone for 28-31 days

Dose level	0 mg/kg (10) ^a	5 mg/kg (10)	20 mg/kg (9)	80 mg/kg (10)
Total protein (g/dl)	6.23±0.33	5.89±0.39	5.86±0.23	5.92±0.48
Albumin/globulin ratio	3.41±0.54	2.81±0.49	2.78±0.37	2.45±0.51
Albumin (g/dl)	4.80±0.28	4.32±0.31	4.29±0.13	4.15±0.18
Total cholesterol (mg/dl)	74.9±10.2	72.1±11.9	54.3±10.1	46.5±4.90
BUN (mg/dl)	14.7±2.5	15.3±2.11	13.2±2.0	16.2±3.8
Creatinine (mg/dl)	0.29±0.06	0.27±0.05	0.28±0.04	0.25±0.05
Ca (mg/dl)	10.3±0.2	10.2±0.5	10.2±0.3	10.3±0.4
P (mg/dl)	8.51±0.67	8.04±0.82	7.34±2.80	8.14±1.31
Na (mEQ/l)	146±1	147±2	147±1	146±1
Cl (mEQ/l)	106±1	107±7	106±2	106±2
K (mEQ/l)	4.50±0.16	4.80±0.29	4.64±0.42	4.70±0.33
GOT (IU/l/37°C)	96.0±25.7	92.2±23.6	91.6±19.7	90.8±28.1
GPT (IU/l/37°C)	36.9±8.1	40.1±6.2	40.9±6.2	39.5±6.3
ALP (IU/l/37°C)	480±181	607±165	604±113	774±227
γ -GTP (IU/l/37°C)	<2	<2	<2	<2

^a: Numbers in parentheses represent the numbers of rats examined.
Data represent mean values ± S.D.

Table 11. Serum hormonal data of male and female rats treated with flutamide for 28-31 days

Dose level	0 mg/kg	0.25 mg/kg	1 mg/kg	4 mg/kg
[Male]	(10) ^a	(10)	(10)	(10)
Testosterone (ng/ml)	2.2±1.1	2.3±1.4	3.0±1.6	3.9±0.7*
Estradiol (pg/ml)	4.7±0.8	4.8±0.7	5.2±0.6	5.7±0.7*
FSH (ng/ml)	17.5±4.2	15.9±2.3	17.7±3.8	19.1±2.4
LH (ng/ml)	3.0±0.4	2.9±0.3	3.1±0.4	3.3±0.6
Prolactin (ng/ml)	22.9±24.5	17.7±13.3	28.3±13.7	28.9±14.6
[Female]	(10) ^a	(10)	(10)	(10)
Testosterone (ng/ml)	<0.1	<0.1	<0.1	<0.1
Estradiol (pg/ml)	10.3±1.3	8.9±2.5	12.1±2.7	9.7±2.2
FSH (ng/ml)	11.1±1.7	10.6±1.1	10.3±2.1	12.6±1.3
LH (ng/ml)	2.8±0.2	2.7±0.3	2.8±0.2	2.9±0.1
Prolactin (ng/ml)	14.1±13.6	19.6±22.7	21.6±17.6	16.0±13.9

a : numbers in parentheses represent the numbers of rats examined.

Data represent mean values ± S.D.

* : significantly different from the 0 mg/kg-group at $p < 0.05$.

Table 12. Serum hormonal data of male and female rats treated with methyltestosterone for 28-31 days

Dose level	0 mg/kg	5 mg/kg	20 mg/kg	80 mg/kg
[Male]	(10) ^a	(9)	(10)	(10)
Testosterone (ng/ml)	1.6±0.7	3.2±1.6	2.6±1.7	1.1±1.5
E2 (pg/ml)	4.4±0.7	5.2±0.7	4.9±0.9	4.3±0.8
LH (ng/ml)	2.6±0.4	2.7±0.3	2.6±0.3	2.4±0.2
FSH (ng/ml)	14.3±1.4	15.4±1.5	16.1±2.0	13.6±1.6
Prolactin (ng/ml)	14.6±8.4	11.7±6.9	13.0±4.9	15.0±10.5
[Female]	(10)	(10)	(9)	(10)
Testosterone (ng/ml)	<0.1	<0.1	<0.1	<0.1
E2 (pg/ml)	11.4±5.0	11.5±7.1	8.3±1.5	8.7±2.4
LH (ng/ml)	2.6±0.3	2.7±0.3	2.6±0.2	2.5±0.2
FSH (ng/ml)	9.8±0.9	10.2±1.7	10.0±1.6	11.7±1.6*
Prolactin (ng/ml)	12.1±7.7	99.1±249	12.2±11.3	24.8±22.5

^a. Numbers in parentheses represent the numbers of rats examined.

Data represent mean values ± S.D.

* Significantly different from the 0 mg/kg group at p<0.05.

Table 13. Absolute and relative organ weights of male rats treated with flutamide for 28 days

Dose level	0 mg/kg	0.25 mg/kg	1 mg/kg	4 mg/kg
	(10) ^a	(10)	(10)	(10)
Absolute organ weights (g)				
Body weight	389.9±29.0	372.8±16.7	374.1±19.1	373.5±17.2
Liver	15.4±1.9	13.7±1.5	14.1±1.1	14.5±1.1
Adrenal	0.050±0.005	0.045±0.007	0.048±0.006	0.051±0.007
Kidney	2.69±0.30	2.50±0.21	2.56±0.17	2.43±0.28
Pituitary	0.012±0.002	0.011±0.001	0.013±0.002	0.013±0.001
Thyroid	0.023±0.005	0.021±0.004	0.021±0.004	0.020±0.003
Testis	3.16±0.30	3.08±0.15	3.01±0.22	3.02±0.12
Epididymis	0.914±0.056	0.864±0.042	0.816±0.059**	0.777±0.061**
Ventral prostate	0.52±0.07	0.47±0.10	0.50±0.09	0.43±0.10
Seminal vesicle/ Coagulating gland/ Dorsolateral prostate	1.80±0.23	1.74±0.17	1.77±0.27	1.47±0.26**
Relative organ weights (%)				
Liver	3.954±0.382	3.659±0.257*	3.771±0.136	3.869±0.210
Adrenal	0.0128±0.0018	0.0122±0.0019	0.0121±0.0026	0.0136±0.0017
Kidney	0.690±0.069	0.670±0.046	0.648±0.142	0.650±0.064
Pituitary	0.0031±0.0003	0.0029±0.0003	0.0034±0.0005	0.0035±0.0003
Thyroid	0.0059±0.0012	0.0057±0.0012	0.0057±0.0010	0.0054±0.0010
Testis	0.815±0.089	0.829±0.058	0.755±0.150	0.812±0.058
Epididymis	0.236±0.025	0.232±0.018	0.204±0.038*	0.209±0.021
Ventral prostate	0.135±0.021	0.127±0.027	0.135±0.023	0.117±0.029
Seminal vesicle/ Coagulating gland/ Dorsolateral prostate	0.461±0.055	0.467±0.054	0.472±0.062	0.394±0.070*

a : numbers in parentheses represent the numbers of rats examined.

Data represent mean values ± S.D.

**, * : significantly different from the 0 mg/kg-group at $p < 0.01$ and $p < 0.05$, respectively.