Table 25 - 1 Histopathology - Incidence of microscopic neoplastic lesions in male rats (Satellite group)
Interim kill after 26 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	10	10	10	10
Cardiovascular System					
Heart:	(N=)	(10)	(10)	(10)	(10)
Aorta:	(N=)	(10)	(10)	(10)	(10)
Hematopoietic & Lymphatic System					
Bone marrow (femur) :	(N=)	(10)	(10)	(10)	(10)
Bone marrow (sternum) :	(N=)	(10)	(10)	(10)	(10)
Bone marrow (vertebra) :	(N=)	(10)	(10)	(10)	(10)
Thymus:	(N=)	(10)	(10)	(10)	(10)
Lymph nodes (cervical) :	(N=)	(10)	(10)	(10)	(10)
Lymph nodes (mesenteric) :	(N=)	(10)	(10)	(10)	(10)
Spleen:	(N=)	(10)	(10)	(10)	(10)
Respiratory System					
Trachea:	(N=)	(10)	(10)	(10)	(10)
Lung:	(N=)	(10)	(10)	(10)	(10)
Digestive System					
Submaxillary gland:	(N=)	(10)	(10)	(10)	(10)
Sublingular gland:	(N=)	(10)	(10)	(10)	(10)
Esophagus:	(N=)	(10)	(10)	(10)	(10)
Stomach (non-glandular portion) :	(N=)	(10)	(10)	(10)	(10)
Stomach (glandular portion) :	(N=)	(10)	(10)	(10)	(10)
Small intestine:	(N=)	(10)	(10)	(10)	(10)
Large intestine:	(N=)	(10)	(10)	(10)	(10)
Liver:	(N=)	(10)	(10)	(10)	(10)
Pancreas:	(N=)	(10)	(10)	(10)	(10)
Urinary System					
Kidney:	(N=)	(10)	(10)	(10)	(10)
Urinary bladder:	(N=)	(10)	(10)	(10)	(10)
Genital System					
Testis:	(N=)	(10)	(10)	(10)	(10)
Epididymis:	(N=)	(10)	(10)	(10)	(10)
Seminal vesicle:	(N=)	(10)	(10)	(10)	(10)
Coagulating gland:	(N=)	(10)	(10)	(10)	(10)
Prostate:	(N=)	(10)	(10)	(10)	(10)
Endocrine System					
Pituitary:	(N=)	(10)	(10)	(10)	(10)
Thyroid:	(N=)	(10)	(10)	(10)	(10)
Parathyroid:	(N=)	(10)	(10)	(10)	(10)
Adrenal:	(N=)	(10)	(10)	(10)	(10)
Nervous System					
Cerebrum:	(N=)	(10)	(10)	(10)	(10)
Cerebellum:	(N=)	(10)	(10)	(10)	(10)
Brain stem:	(N=)	(10)	(10)	(10)	(10)
Spinal cord (cervical) :	(N=)	(10)	(10)	(10)	(10)
Spinal cord (thoracic) :	(N=)	(9)	(10)	(10)	(10)
Spinal cord (lumbar) :	(N=)	(10)	(10)	(9)	(10)
Sciatic nerve:	(N=)	(10)	(10)	(10)	(10)
Musculo-Skeletal System					
Bone (sternum) :	(N=)	(10)	(10)	(10)	(10)
Bone (femur) :	(N=)	(10)	(10)	(10)	(10)
Bone (vertebra) :	(N=)	(10)	(10)	(10)	(10)

(N=) : Number of animals examined microscopically at the site.

Table 25 - 2 Histopathology - Incidence of microscopic neoplastic lesions in male rats (Satellite group)
Interim kill after 26 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	10	10	10	10
Musculo-Skeletal System《cont.》					
Bone (vertebra) 《cont.》:	(N=)	(10)	(10)	(10)	(10)
Tibio-femoral joint:	(N=)	(10)	(10)	(10)	(10)
Skeletal muscle (m. triceps surae):	(N=)	(10)	(10)	(10)	(10)
Sense Organs					
Eye:	(N=)	(10)	(10)	(10)	(10)
Harderian gland:	(N=)	(10)	(10)	(10)	(10)
Integumentary System					
Skin:	(N=)	(10)	(10)	(10)	(10)
No. of benign neoplasms		0	0	0	0
No. of malignant neoplasms		0	0	0	0
No. of benign & malignant neoplasms		0	0	0	0
No. of animals with benign neoplasm(s)		0	0	0	0
No. of animals with malignant neoplasm(s)		0	0	0	0
No. of animals with neoplasm(s)		0	0	0	0

(N=): Number of animals examined microscopically at the site.

Table 25 - 3 Histopathology - Incidence of microscopic neoplastic lesions in male rats (Satellite group)
Interim kill after 52 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	10	10	10	10
Cardiovascular System					
Heart:	(N=)	(10)	(10)	(10)	(10)
Aorta:	(N=)	(10)	(10)	(10)	(10)
Hematopoietic & Lymphatic System					
Bone marrow (femur) :	(N=)	(10)	(10)	(10)	(10)
Bone marrow (sternum) :	(N=)	(10)	(10)	(10)	(10)
Bone marrow (vertebra) :	(N=)	(10)	(10)	(10)	(10)
Thymus:	(N=)	(10)	(10)	(10)	(10)
Lymph nodes (cervical) :	(N=)	(10)	(10)	(10)	(10)
Lymph nodes (mesenteric) :	(N=)	(10)	(10)	(10)	(10)
Spleen:	(N=)	(10)	(10)	(10)	(10)
Respiratory System					
Trachea:	(N=)	(10)	(10)	(10)	(10)
Lung:	(N=)	(10)	(10)	(10)	(10)
Digestive System					
Submaxillary gland:	(N=)	(10)	(10)	(10)	(10)
Sublingular gland:	(N=)	(10)	(10)	(10)	(10)
Esophagus:	(N=)	(10)	(10)	(10)	(10)
Stomach (non-glandular portion) :	(N=)	(10)	(10)	(10)	(10)
Stomach (glandular portion) :	(N=)	(10)	(10)	(10)	(10)
Small intestine:	(N=)	(10)	(10)	(10)	(10)
Large intestine:	(N=)	(10)	(10)	(10)	(10)
Liver:	(N=)	(10)	(10)	(10)	(10)
Pancreas:	(N=)	(10)	(10)	(10)	(10)
Urinary System					
Kidney:	(N=)	(10)	(10)	(10)	(10)
Urinary bladder:	(N=)	(10)	(10)	(10)	(10)
Genital System					
Testis:	(N=)	(10)	(10)	(10)	(10)
Epididymis:	(N=)	(10)	(10)	(10)	(10)
Seminal vesicle:	(N=)	(10)	(10)	(10)	(10)
Coagulating gland:	(N=)	(10)	(10)	(10)	(10)
Prostate:	(N=)	(10)	(10)	(10)	(10)
Endocrine System					
Pituitary:	(N=)	(10)	(10)	(10)	(10)
(B) Anterior adenoma		0	1	2	0
Thyroid:	(N=)	(10)	(10)	(10)	(10)
(B) Follicular adenoma		0	1	0	0
(B) C-cell adenoma		0	0	1	0
Parathyroid:	(N=)	(10)	(10)	(10)	(10)
Adrenal:	(N=)	(10)	(10)	(10)	(10)
Nervous System					
Cerebrum:	(N=)	(10)	(10)	(10)	(10)
Cerebellum:	(N=)	(10)	(10)	(10)	(10)
Brain stem:	(N=)	(10)	(10)	(10)	(10)
Spinal cord (cervical) :	(N=)	(10)	(10)	(10)	(10)
Spinal cord (thoracic) :	(N=)	(10)	(10)	(10)	(10)
Spinal cord (lumbar) :	(N=)	(10)	(10)	(10)	(9)
Sciatic nerve:	(N=)	(10)	(10)	(10)	(10)

(N=) : Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm.

Table 25 - 4 Histopathology - Incidence of microscopic neoplastic lesions in male rats (Satellite group)
Interim kill after 52 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	10	10	10	10
Musculo-Skeletal System					
Bone (sternum) :	(N=)	(10)	(10)	(10)	(10)
Bone (femur) :	(N=)	(10)	(10)	(10)	(10)
Bone (vertebra) :	(N=)	(10)	(10)	(10)	(10)
Tibio-femoral joint:	(N=)	(10)	(10)	(10)	(10)
Skeletal muscle (m. triceps surae) :	(N=)	(10)	(10)	(10)	(10)
Sense Organs					
Eye:	(N=)	(10)	(10)	(10)	(10)
Harderian gland:	(N=)	(10)	(10)	(10)	(10)
Integumentary System					
Skin:	(N=)	(10)	(10)	(10)	(10)
(B) Papilloma		1	0	0	0
(B) Fibroma		0	1	0	0
No. of benign neoplasms		1	3	3	0
No. of malignant neoplasms		0	0	0	0
No. of benign & malignant neoplasms		1	3	3	0
No. of animals with benign neoplasm(s)		1	3	3	0
No. of animals with malignant neoplasm(s)		0	0	0	0
No. of animals with neoplasm(s)		1	3	3	0

(N=) : Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm.

Table 25 - 5 Histopathology - Incidence of microscopic neoplastic lesions in male rats (Satellite group)
Interim kill after 78 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	6	5	10	8
Cardiovascular System					
Heart:	(N=)	(6)	(5)	(10)	(8)
Aorta:	(N=)	(6)	(5)	(10)	(8)
Hematopoietic & Lymphatic System					
Bone marrow (femur):	(N=)	(6)	(5)	(10)	(8)
Bone marrow (sternum):	(N=)	(6)	(5)	(10)	(8)
Bone marrow (vertebra):	(N=)	(6)	(5)	(10)	(8)
Thymus:	(N=)	(6)	(5)	(10)	(8)
Lymph nodes (cervical):	(N=)	(6)	(5)	(10)	(8)
Lymph nodes (mesenteric):	(N=)	(6)	(5)	(10)	(8)
Spleen:	(N=)	(6)	(5)	(10)	(8)
Respiratory System					
Trachea:	(N=)	(6)	(5)	(10)	(8)
Lung:	(N=)	(6)	(5)	(10)	(8)
(B) Adenoma		2	0	0	0
Digestive System					
Submaxillary gland:	(N=)	(6)	(5)	(10)	(8)
Sublingular gland:	(N=)	(6)	(5)	(10)	(8)
Esophagus:	(N=)	(6)	(5)	(10)	(8)
Stomach (non-glandular portion):	(N=)	(6)	(5)	(10)	(8)
Stomach (glandular portion):	(N=)	(6)	(5)	(10)	(8)
Small intestine:	(N=)	(6)	(5)	(10)	(8)
Large intestine:	(N=)	(6)	(5)	(10)	(8)
Liver:	(N=)	(6)	(5)	(10)	(8)
(B) Hepatocellular adenoma		1	0	1	1
Pancreas:	(N=)	(6)	(5)	(10)	(8)
Urinary System					
Urinary bladder:	(N=)	(6)	(5)	(10)	(8)
Genital System					
Testis:	(N=)	(6)	(5)	(10)	(8)
Epididymis:	(N=)	(6)	(5)	(10)	(8)
Seminal vesicle:	(N=)	(6)	(5)	(10)	(8)
Coagulating gland:	(N=)	(6)	(5)	(10)	(8)
Prostate:	(N=)	(6)	(5)	(10)	(8)
Endocrine System					
Pituitary:	(N=)	(6)	(5)	(10)	(8)
(B) Anterior adenoma		3	4	4	3
Thyroid:	(N=)	(6)	(5)	(10)	(8)
(B) C-cell adenoma		2	1	2	1
Parathyroid:	(N=)	(6)	(5)	(10)	(8)
Adrenal:	(N=)	(6)	(5)	(10)	(8)
(B) Cortical adenoma		0	0	1	0
(B) Pheochromocytoma		0	1	0	0
Nervous System					
Cerebrum:	(N=)	(6)	(5)	(10)	(8)
Cerebellum:	(N=)	(6)	(5)	(10)	(8)
Brain stem:	(N=)	(6)	(5)	(10)	(8)
Spinal cord (cervical):	(N=)	(6)	(5)	(10)	(8)
Spinal cord (thoracic):	(N=)	(6)	(5)	(10)	(8)
Spinal cord (lumbar):	(N=)	(6)	(5)	(10)	(8)

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm

Table 25 - 6 Histopathology - Incidence of microscopic neoplastic lesions in male rats (Satellite group)
Interim kill after 78 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	6	5	10	8
Nervous System《cont.》					
Spinal cord (lumbar) 《cont.》:	(N=)	(6)	(5)	(10)	(8)
Sciatic nerve:	(N=)	(6)	(5)	(10)	(8)
Musculo-Skeletal System					
Bone (sternum):	(N=)	(6)	(5)	(10)	(8)
Bone (femur):	(N=)	(6)	(5)	(10)	(8)
Bone (vertebra):	(N=)	(6)	(5)	(10)	(8)
Tibio-femoral joint:	(N=)	(6)	(5)	(10)	(8)
Skeletal muscle (m. triceps surae):	(N=)	(6)	(5)	(10)	(8)
Sense Organs					
Eye:	(N=)	(6)	(5)	(10)	(8)
Harderian gland:	(N=)	(6)	(5)	(10)	(8)
Integumentary System					
Skin:	(N=)	(6)	(5)	(10)	(8)
(B) Keratoacanthoma		1	0	0	0
(B) Fibroma		0	0	1	0
No. of benign neoplasms		9	6	9	5
No. of malignant neoplasms		0	0	0	0
No. of benign & malignant neoplasms		9	6	9	5
No. of animals with benign neoplasm(s)		6	4	7	4
No. of animals with malignant neoplasm(s)		0	0	0	0
No. of animals with neoplasm(s)		6	4	7	4

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm.

Table 25 - 7 Histopathology - Incidence of microscopic neoplastic lesions in male rats (Main group)
Terminal kill after 104 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	18	20	18	29
Cardiovascular System					
Heart:	(N=)	(18)	(20)	(18)	(29)
(B) Schwannoma		0	0	0	1
Aorta:	(N=)	(18)	(20)	(18)	(29)
Hematopoietic & Lymphatic System					
General:	(N=)	(18)	(20)	(18)	(29)
(M) Mononuclear cell leukemia		0	1	0	0
Bone marrow (femur):	(N=)	(18)	(20)	(18)	(29)
Bone marrow (sternum):	(N=)	(18)	(20)	(18)	(29)
Bone marrow (vertebra):	(N=)	(18)	(20)	(18)	(29)
Thymus:	(N=)	(18)	(20)	(18)	(29)
Lymph nodes (cervical):	(N=)	(18)	(20)	(18)	(29)
Lymph nodes (mesenteric):	(N=)	(18)	(20)	(18)	(29)
Spleen:	(N=)	(18)	(20)	(18)	(29)
Respiratory System					
Trachea:	(N=)	(18)	(20)	(18)	(29)
Lung:	(N=)	(18)	(20)	(18)	(29)
(B) Adenoma		0	2	1	3
(M) Squamous cell carcinoma		0	0	1	0
Digestive System					
Submaxillary gland:	(N=)	(18)	(20)	(18)	(29)
Sublingular gland:	(N=)	(18)	(20)	(18)	(29)
Esophagus:	(N=)	(18)	(20)	(18)	(29)
Stomach (non-glandular portion):	(N=)	(18)	(20)	(18)	(29)
Stomach (glandular portion):	(N=)	(18)	(20)	(18)	(29)
(M) Leiomyosarcoma		0	0	1	0
Small intestine:	(N=)	(18)	(20)	(18)	(29)
(B) Leiomyoma		0	0	0	1
(M) Adenocarcinoma		0	0	1	0
Large intestine:	(N=)	(18)	(20)	(18)	(29)
Liver:	(N=)	(18)	(20)	(18)	(29)
(M) Hepatocellular carcinoma		0	0	0	1
Pancreas:	(N=)	(18)	(20)	(18)	(29)
(B) Acinar cell adenoma		0	1	0	1
(B) Islet cell adenoma		3	1	1	0
(M) Islet cell carcinoma		0	0	1	0
Urinary System					
Kidney:	(N=)	(18)	(20)	(18)	(29)
(B) Adenoma		0	0	0	1
(B) Lipoma		0	0	0	1
Urinary bladder:	(N=)	(18)	(20)	(18)	(29)
Genital System					
Testis:	(N=)	(18)	(20)	(18)	(29)
(B) Interstitial cell tumor		1	1	0	2
Epididymis:	(N=)	(18)	(20)	(18)	(29)
Seminal vesicle:	(N=)	(18)	(20)	(18)	(29)
Coagulating gland:	(N=)	(18)	(20)	(18)	(29)
(B) Adenoma		0	0	0	1
Prostate:	(N=)	(18)	(20)	(18)	(29)

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.

Table 25 - 8 Histopathology - Incidence of microscopic neoplastic lesions in male rats (Main group)
Terminal kill after 104 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	18	20	18	29
Endocrine System					
Pituitary:	(N=)	(18)	(20)	(18)	(29)
(B) Anterior adenoma		13	14	13	21
(B) Adenoma in intermediate part		0	1	0	0
< Mass not in section >		0	0	0	1
Thyroid:	(N=)	(18)	(20)	(18)	(29)
(B) Follicular adenoma		2	1	0	0
(B) C-cell adenoma		2	5	0	1
(M) C-cell carcinoma		0	0	1	0
Parathyroid:	(N=)	(18)	(20)	(18)	(29)
Adrenal:	(N=)	(18)	(20)	(18)	(29)
(B) Pheochromocytoma		8	4	3	4*
Nervous System					
Cerebrum:	(N=)	(18)	(20)	(18)	(29)
(B) Glioma		0	0	0	1
Cerebellum:	(N=)	(18)	(20)	(18)	(29)
(B) Granular cell tumor		0	0	1	0
Brain stem:	(N=)	(18)	(20)	(18)	(29)
Spinal cord (cervical):	(N=)	(18)	(20)	(18)	(29)
Spinal cord (thoracic):	(N=)	(18)	(20)	(18)	(29)
Spinal cord (lumbar):	(N=)	(18)	(20)	(18)	(29)
Sciatic nerve:	(N=)	(18)	(20)	(18)	(29)
Musculo-Skeletal System					
Bone (sternum):	(N=)	(18)	(20)	(18)	(29)
Bone (femur):	(N=)	(18)	(20)	(18)	(29)
Bone (vertebra):	(N=)	(18)	(20)	(18)	(29)
Tibio-femoral joint:	(N=)	(18)	(20)	(18)	(29)
Skeletal muscle (m. triceps surae):	(N=)	(18)	(20)	(18)	(29)
Sense Organs					
Eye:	(N=)	(18)	(20)	(18)	(29)
(B) Schwannoma		1	0	0	0
Harderian gland:	(N=)	(18)	(20)	(18)	(29)
Auricle:	(N=)	(3)	(0)	(0)	(2)
(B) Papilloma		1	-	-	0
(M) Malignant schwannoma		0	-	-	1
Integumentary System					
Skin:	(N=)	(18)	(20)	(18)	(29)
(B) Papilloma		1	3	2	0
(B) Keratoacanthoma		1	2	0	6
(B) Trichoepithelioma		0	1	0	0
(B) Sebaceous gland adenoma		0	1	0	0
(B) Basal cell adenoma		0	0	0	1
(B) Fibroma		1	0	3	2
(B) Lipoma		2	1	2	1
(M) Basal cell carcinoma		0	0	0	1
(M) Fibrosarcoma		0	1	1	0
(M) Malignant schwannoma		0	0	0	1
Mammary gland:	(N=)	(1)	(3)	(1)	(1)
(B) Fibroadenoma		1	2	0	0
(M) Adenocarcinoma		0	0	1	1

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.
*: Significantly different from the control at 5 % level of probability.

Table 25 - 9 Histopathology - Incidence of microscopic neoplastic lesions in male rats (Main group)
Terminal kill after 104 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	18	20	18	29
No. of benign neoplasms		37	40	26	48
No. of malignant neoplasms		0	2	7	5
No. of benign & malignant neoplasms		37	42	33	53
No. of animals with benign neoplasm(s)		18	19	15	27
No. of animals with malignant neoplasm(s)		0	2	7	5
No. of animals with neoplasm(s)		18	19	18	27

Table 25 - 10 Histopathology - Incidence of microscopic neoplastic lesions in male rats (Main group)
Killed in extremis or found dead

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	32	30	32	21
General Organs					
(M) Systemic histiocytic sarcoma		0	0	1	0
(M) Systemic malignant fibrous histiocytoma		2	0	0	0
Cardiovascular System					
Heart:	(N=)	(32)	(30)	(32)	(21)
(B) Schwannoma		0	1	1	0
Aorta:	(N=)	(32)	(30)	(32)	(21)
Hematopoietic & Lymphatic System					
General:	(N=)	(32)	(30)	(32)	(21)
(M) Myelogenic leukemia		1	0	0	0
(M) Malignant lymphoma		0	2	1	0
Bone marrow (femur):	(N=)	(32)	(30)	(31)	(21)
Bone marrow (sternum):	(N=)	(32)	(30)	(32)	(21)
Bone marrow (vertebra):	(N=)	(32)	(30)	(32)	(21)
Thymus:	(N=)	(32)	(29)	(32)	(21)
Lymph nodes (cervical):	(N=)	(32)	(29)	(30)	(21)
Lymph nodes (mesenteric):	(N=)	(32)	(30)	(32)	(21)
Spleen:	(N=)	(32)	(30)	(32)	(21)
(M) Histiocytic sarcoma		0	1	0	0
Respiratory System					
Nasal cavity:	(N=)	(0)	(2)	(0)	(3)
Trachea:	(N=)	(32)	(30)	(32)	(21)
Lung:	(N=)	(32)	(30)	(32)	(21)
(B) Adenoma		0	1	0	0
(M) Adenocarcinoma		0	0	0	1
Digestive System					
Submaxillary gland:	(N=)	(32)	(29)	(30)	(21)
Sublingular gland:	(N=)	(32)	(29)	(30)	(21)
Esophagus:	(N=)	(32)	(30)	(32)	(21)
Stomach (non-glandular portion):	(N=)	(32)	(30)	(32)	(21)
Stomach (glandular portion):	(N=)	(32)	(30)	(32)	(21)
Small intestine:	(N=)	(32)	(30)	(32)	(21)
(M) Malignant schwannoma		0	1	0	0
Large intestine:	(N=)	(32)	(30)	(32)	(21)
Liver:	(N=)	(32)	(30)	(32)	(21)
(B) Hepatocellular adenoma		0	0	1	0
(M) Hepatocellular carcinoma		0	1	2	0
Pancreas:	(N=)	(32)	(30)	(32)	(21)
(B) Acinar cell adenoma		0	0	1	1
(B) Islet cell adenoma		1	0	0	1
Urinary System					
Kidney:	(N=)	(32)	(30)	(32)	(21)
(B) Adenoma		0	0	0	3
Urinary bladder:	(N=)	(32)	(30)	(32)	(21)
Genital System					
Testis:	(N=)	(31)	(30)	(32)	(21)
(B) Interstitial cell tumor		2	1	0	0
Epididymis:	(N=)	(31)	(30)	(32)	(21)
Seminal vesicle:	(N=)	(32)	(30)	(32)	(21)

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.

Table 25 - 11 Histopathology - Incidence of microscopic neoplastic lesions in male rats (Main group)
Killed in extremis or found dead

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	32	30	32	21
Genital System《cont.》					
Seminal vesicle《cont.》:	(N=)	(32)	(30)	(32)	(21)
Coagulating gland:	(N=)	(32)	(30)	(32)	(21)
Prostate:	(N=)	(32)	(30)	(32)	(21)
Penis:	(N=)	(1)	(0)	(0)	(0)
Endocrine System					
Pituitary:	(N=)	(32)	(30)	(32)	(21)
(B) Anterior adenoma		22	21	14*	18
Thyroid:	(N=)	(32)	(29)	(31)	(21)
(B) Follicular adenoma		1	0	1	0
(B) C-cell adenoma		2	4	2	4
(M) Follicular adenocarcinoma		1	0	0	0
(M) C-cell carcinoma		2	0	0	1
Parathyroid:	(N=)	(32)	(28)	(31)	(21)
Adrenal:	(N=)	(32)	(30)	(32)	(21)
(B) Cortical adenoma		1	2	0	0
(B) Pheochromocytoma		6	4	2	6
(M) Cortical adenocarcinoma		0	0	1	0
Nervous System					
Cerebrum:	(N=)	(32)	(30)	(32)	(21)
(B) Glioma		1	0	1	0
(M) Malignant reticulosis		1	0	0	0
Cerebellum:	(N=)	(32)	(30)	(32)	(21)
Brain stem:	(N=)	(32)	(30)	(32)	(21)
Spinal cord (cervical):	(N=)	(32)	(30)	(32)	(21)
Spinal cord (thoracic):	(N=)	(32)	(30)	(32)	(21)
Spinal cord (lumbar):	(N=)	(32)	(30)	(32)	(21)
Sciatic nerve:	(N=)	(31)	(30)	(31)	(20)
Musculo-Skeletal System					
Bone (sternum):	(N=)	(32)	(30)	(32)	(21)
Bone (femur):	(N=)	(32)	(30)	(31)	(21)
(B) Osteochondroma		0	0	1	0
Bone (vertebra):	(N=)	(32)	(30)	(32)	(21)
Bone (others):	(N=)	(3)	(3)	(8)	(3)
(M) Osteosarcoma		0	0	1	0
Tibio-femoral joint:	(N=)	(32)	(30)	(31)	(21)
Skeletal muscle (m. triceps surae):	(N=)	(32)	(30)	(32)	(21)
Sense Organs					
Eye:	(N=)	(32)	(29)	(30)	(21)
Harderian gland:	(N=)	(32)	(29)	(30)	(21)
Ear:	(N=)	(0)	(1)	(1)	(0)
(M) Zymbal's gland carcinoma		-	0	1	-
Integumentary System					
Skin:	(N=)	(32)	(30)	(32)	(21)
(B) Papilloma		0	2	1	0
(B) Keratoacanthoma		2	1	0	1
(B) Basal cell adenoma		0	0	0	2
(B) Fibroma		3	3	0	3
(B) Lipoma		2	1	0	0
(M) Squamous cell carcinoma		0	0	1	1

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.
*: Significantly different from the control at 5 % level of probability.

Table 25 - 12 Histopathology - Incidence of microscopic neoplastic lesions in male rats (Main group)
Killed in extremis or found dead

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	32	30	32	21
Integumentary System《cont.》					
Skin《cont.》:	(N=)	(32)	(30)	(32)	(21)
(M) Liposarcoma		1	0	0	0
(M) Hemangiosarcoma		0	0	1	0
(M) Malignant hemangiopericytoma		0	0	0	1
(M) Osteosarcoma		0	1	0	1
(M) Histiocytic sarcoma		0	0	1	0
Mammary gland:	(N=)	(2)	(2)	(1)	(1)
(B) Adenoma		1	0	0	0
(B) Fibroadenoma		1	1	1	0
(M) Adenocarcinoma		0	0	0	1
Body Cavities					
Thoracic cavity:	(N=)	(0)	(0)	(1)	(0)
(M) Malignant mesothelioma		-	-	1	-
Abdominal cavity:	(N=)	(1)	(4)	(3)	(1)
(M) Malignant schwannoma		0	0	1	0
(M) Malignant mesothelioma		0	1	0	0
No. of benign neoplasms		45	42	26	39
No. of malignant neoplasms		8	7	12	6
No. of benign & malignant neoplasms		53	49	38	45
No. of animals with benign neoplasm(s)		26	28	18	20
No. of animals with malignant neoplasm(s)		8	7	12	4
No. of animals with neoplasm(s)		30	28	24	20

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.

Table 25 - 13 Histopathology - Incidence of microscopic neoplastic lesions in male rats (Main and satellite groups)
All animals examined

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	76	75	80	78
General Organs					
(M) Systemic histiocytic sarcoma		0	0	1	0
(M) Systemic malignant fibrous histiocytoma		2	0	0	0
Cardiovascular System					
Heart:	(N=)	(76)	(75)	(80)	(78)
(B) Schwannoma		0	1	1	1
Aorta:	(N=)	(76)	(75)	(80)	(78)
Hematopoietic & Lymphatic System					
General:	(N=)	(76)	(75)	(80)	(78)
(M) Myelogenic leukemia		1	0	0	0
(M) Malignant lymphoma		0	2	1	0
(M) Mononuclear cell leukemia		0	1	0	0
Bone marrow (femur):	(N=)	(76)	(75)	(79)	(78)
Bone marrow (sternum):	(N=)	(76)	(75)	(80)	(78)
Bone marrow (vertebra):	(N=)	(76)	(75)	(80)	(78)
Thymus:	(N=)	(76)	(74)	(80)	(78)
Lymph nodes (cervical):	(N=)	(76)	(74)	(78)	(78)
Lymph nodes (mesenteric):	(N=)	(76)	(75)	(80)	(78)
Spleen:	(N=)	(76)	(75)	(80)	(78)
(M) Histiocytic sarcoma		0	1	0	0
Respiratory System					
Nasal cavity:	(N=)	(0)	(2)	(0)	(3)
Trachea:	(N=)	(76)	(75)	(80)	(78)
Lung:	(N=)	(76)	(75)	(80)	(78)
(B) Adenoma		2	3	1	3
(M) Squamous cell carcinoma		0	0	1	0
(M) Adenocarcinoma		0	0	0	1
Digestive System					
Submaxillary gland:	(N=)	(76)	(74)	(78)	(78)
Sublingular gland:	(N=)	(76)	(74)	(78)	(78)
Esophagus:	(N=)	(76)	(75)	(80)	(78)
Stomach (non-glandular portion):	(N=)	(76)	(75)	(80)	(78)
Stomach (glandular portion):	(N=)	(76)	(75)	(80)	(78)
(M) Leiomyosarcoma		0	0	1	0
Small intestine:	(N=)	(76)	(75)	(80)	(78)
(B) Leiomyoma		0	0	0	1
(M) Adenocarcinoma		0	0	1	0
(M) Malignant schwannoma		0	1	0	0
Large intestine:	(N=)	(76)	(75)	(80)	(78)
Liver:	(N=)	(76)	(75)	(80)	(78)
(B) Hepatocellular adenoma		1	0	2	1
(M) Hepatocellular carcinoma		0	1	2	1
Pancreas:	(N=)	(76)	(75)	(80)	(78)
(B) Acinar cell adenoma		0	1	1	2
(B) Islet cell adenoma		4	1	1	1
(M) Islet cell carcinoma		0	0	1	0
Urinary System					
Kidney:	(N=)	(76)	(75)	(80)	(78)
(B) Adenoma		0	0	0	4

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.

Table 25 - 14 Histopathology - Incidence of microscopic neoplastic lesions in male rats (Main and satellite groups)
All animals examined

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	76	75	80	78
Urinary System《cont.》					
Kidney《cont.》:	(N=)	(76)	(75)	(80)	(78)
(B) Lipoma		0	0	0	1
Urinary bladder:	(N=)	(76)	(75)	(80)	(78)
Genital System					
Testis:	(N=)	(75)	(75)	(80)	(78)
(B) Interstitial cell tumor		3	2	0	2
Epididymis:	(N=)	(75)	(75)	(80)	(78)
Seminal vesicle:	(N=)	(76)	(75)	(80)	(78)
Coagulating gland:	(N=)	(76)	(75)	(80)	(78)
(B) Adenoma		0	0	0	1
Prostate:	(N=)	(76)	(75)	(80)	(78)
Penis:	(N=)	(1)	(0)	(0)	(0)
Endocrine System					
Pituitary:	(N=)	(76)	(75)	(80)	(78)
(B) Anterior adenoma		38	40	33	42
(B) Adenoma in intermediate part		0	1	0	0
< Mass not in section >		0	0	0	1
Thyroid:	(N=)	(76)	(74)	(79)	(78)
(B) Follicular adenoma		3	2	1	0
(B) C-cell adenoma		6	10	5	6
(M) Follicular adenocarcinoma		1	0	0	0
(M) C-cell carcinoma		2	0	1	1
Parathyroid:	(N=)	(76)	(73)	(79)	(78)
Adrenal:	(N=)	(76)	(75)	(80)	(78)
(B) Cortical adenoma		1	2	1	0
(B) Pheochromocytoma		14	9	5*	10
(M) Cortical adenocarcinoma		0	0	1	0
Nervous System					
Cerebrum:	(N=)	(76)	(75)	(80)	(78)
(B) Glioma		1	0	1	1
(M) Malignant reticulosis		1	0	0	0
Cerebellum:	(N=)	(76)	(75)	(80)	(78)
(B) Granular cell tumor		0	0	1	0
Brain stem:	(N=)	(76)	(75)	(80)	(78)
Spinal cord (cervical):	(N=)	(76)	(75)	(80)	(78)
Spinal cord (thoracic):	(N=)	(75)	(75)	(80)	(78)
Spinal cord (lumbar):	(N=)	(76)	(75)	(79)	(77)
Sciatic nerve:	(N=)	(75)	(75)	(79)	(77)
Musculo-Skeletal System					
Bone (sternum):	(N=)	(76)	(75)	(80)	(78)
Bone (femur):	(N=)	(76)	(75)	(79)	(78)
(B) Osteochondroma		0	0	1	0
Bone (vertebra):	(N=)	(76)	(75)	(80)	(78)
Bone (others):	(N=)	(6)	(4)	(10)	(9)
(M) Osteosarcoma		0	0	1	0
Tibio-femoral joint:	(N=)	(76)	(75)	(79)	(78)
Skeletal muscle (m. triceps surae):	(N=)	(76)	(75)	(80)	(78)

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.
*: Significantly different from the control at 5 % level of probability.

Table 25 - 15 Histopathology - Incidence of microscopic neoplastic lesions in male rats (Main and satellite groups)
All animals examined

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	76	75	80	78
Sense Organs					
Eye:	(N=)	(76)	(74)	(78)	(78)
(B) Schwannoma		1	0	0	0
Harderian gland:	(N=)	(76)	(74)	(78)	(78)
Ear:	(N=)	(0)	(1)	(1)	(0)
(M) Zymbal's gland carcinoma		-	0	1	-
Auricle:	(N=)	(3)	(1)	(0)	(2)
(B) Papilloma		1	0	-	0
(M) Malignant schwannoma		0	0	-	1
Integumentary System					
Skin:	(N=)	(76)	(75)	(80)	(78)
(B) Papilloma		2	5	3	0
(B) Keratoacanthoma		4	3	0	7
(B) Trichoepithelioma		0	1	0	0
(B) Sebaceous gland adenoma		0	1	0	0
(B) Basal cell adenoma		0	0	0	3
(B) Fibroma		4	4	4	5
(B) Lipoma		4	2	2	1
(M) Squamous cell carcinoma		0	0	1	1
(M) Basal cell carcinoma		0	0	0	1
(M) Fibrosarcoma		0	1	1	0
(M) Liposarcoma		1	0	0	0
(M) Hemangiosarcoma		0	0	1	0
(M) Malignant hemangiopericytoma		0	0	0	1
(M) Osteosarcoma		0	1	0	1
(M) Malignant schwannoma		0	0	0	1
(M) Histiocytic sarcoma		0	0	1	0
Mammary gland:	(N=)	(4)	(5)	(2)	(2)
(B) Adenoma		1	0	0	0
(B) Fibroadenoma		2	3	1	0
(M) Adenocarcinoma		0	0	1	2
Body Cavities					
Thoracic cavity:	(N=)	(0)	(0)	(1)	(0)
(M) Malignant mesothelioma		-	-	1	-
Abdominal cavity:	(N=)	(1)	(5)	(4)	(2)
(M) Malignant schwannoma		0	0	1	0
(M) Malignant mesothelioma		0	1	0	0
No. of benign neoplasms		92	91	64	92
No. of malignant neoplasms		8	9	19	11
No. of benign & malignant neoplasms		100	100	83	103
No. of animals with benign neoplasm(s)		51	54	43	51
No. of animals with malignant neoplasm(s)		8	9	19	9
No. of animals with neoplasm(s)		55	54	52	51

(N=) : Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.

Table 26 - 1 Histopathology - Incidence of microscopic neoplastic lesions in female rats (Satellite group)
Interim kill after 26 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	10	10	10	10
Cardiovascular System					
Heart:	(N=)	(10)	(10)	(10)	(10)
Aorta:	(N=)	(10)	(10)	(10)	(10)
Hematopoietic & Lymphatic System					
Bone marrow (femur) :	(N=)	(10)	(10)	(10)	(10)
Bone marrow (sternum) :	(N=)	(10)	(10)	(10)	(10)
Bone marrow (vertebra) :	(N=)	(10)	(10)	(10)	(10)
Thymus:	(N=)	(10)	(10)	(10)	(10)
Lymph nodes (cervical) :	(N=)	(10)	(10)	(10)	(10)
Lymph nodes (mesenteric) :	(N=)	(10)	(10)	(10)	(10)
Spleen:	(N=)	(10)	(10)	(10)	(10)
Respiratory System					
Trachea:	(N=)	(10)	(10)	(10)	(10)
Lung:	(N=)	(10)	(10)	(10)	(10)
Digestive System					
Submaxillary gland:	(N=)	(10)	(10)	(10)	(10)
Sublingular gland:	(N=)	(10)	(10)	(10)	(10)
Esophagus:	(N=)	(10)	(10)	(10)	(10)
Stomach (non-glandular portion) :	(N=)	(10)	(10)	(10)	(10)
Stomach (glandular portion) :	(N=)	(10)	(10)	(10)	(10)
Small intestine:	(N=)	(10)	(10)	(10)	(10)
Large intestine:	(N=)	(10)	(10)	(10)	(10)
Liver:	(N=)	(10)	(10)	(10)	(10)
Pancreas:	(N=)	(10)	(10)	(10)	(10)
Urinary System					
Kidney:	(N=)	(10)	(10)	(10)	(10)
Urinary bladder:	(N=)	(10)	(10)	(10)	(10)
Genital System					
Ovary:	(N=)	(10)	(10)	(10)	(10)
Uterus:	(N=)	(10)	(10)	(10)	(10)
(B) Polyp/endometrial stromal polyp		1	0	0	0
Vagina:	(N=)	(10)	(10)	(10)	(10)
Endocrine System					
Pituitary:	(N=)	(10)	(10)	(10)	(10)
(B) Anterior adenoma		1	0	0	0
Thyroid:	(N=)	(10)	(10)	(10)	(10)
Parathyroid:	(N=)	(10)	(10)	(10)	(10)
Adrenal:	(N=)	(10)	(10)	(10)	(10)
Nervous System					
Cerebrum:	(N=)	(10)	(10)	(10)	(10)
Cerebellum:	(N=)	(10)	(10)	(10)	(10)
Brain stem:	(N=)	(10)	(10)	(10)	(10)
Spinal cord (cervical) :	(N=)	(10)	(10)	(10)	(10)
Spinal cord (thoracic) :	(N=)	(10)	(10)	(10)	(10)
Spinal cord (lumbar) :	(N=)	(10)	(10)	(10)	(10)
Sciatic nerve:	(N=)	(10)	(10)	(10)	(10)
Musculo-Skeletal System					
Bone (sternum) :	(N=)	(10)	(10)	(10)	(10)
Bone (femur) :	(N=)	(10)	(10)	(10)	(10)
Bone (vertebra) :	(N=)	(10)	(10)	(10)	(10)

(N=) : Number of animals examined microscopically at the site.
Malignancy: (B). benign neoplasm.

Table 26 - 2 Histopathology - Incidence of microscopic neoplastic lesions in female rats (Satellite group)
Interim kill after 26 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	10	10	10	10
Musculo-Skeletal System《cont.》					
Bone (vertebra) 《cont.》:	(N=)	(10)	(10)	(10)	(10)
Tibio-femoral joint:	(N=)	(10)	(10)	(10)	(10)
Skeletal muscle (m. triceps surae):	(N=)	(10)	(10)	(10)	(10)
Sense Organs					
Eye:	(N=)	(10)	(10)	(10)	(10)
Harderian gland:	(N=)	(10)	(10)	(10)	(10)
Integumentary System					
Skin:	(N=)	(10)	(10)	(10)	(10)
Mammary gland:	(N=)	(10)	(10)	(9)	(10)
No. of benign neoplasms		2	0	0	0
No. of malignant neoplasms		0	0	0	0
No. of benign & malignant neoplasms		2	0	0	0
No. of animals with benign neoplasm(s)		2	0	0	0
No. of animals with malignant neoplasm(s)		0	0	0	0
No. of animals with neoplasm(s)		2	0	0	0

(N=): Number of animals examined microscopically at the site.

Table 26 - 3 Histopathology - Incidence of microscopic neoplastic lesions in female rats (Satellite group)
Interim kill after 52 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	10	10	10	10
Cardiovascular System					
Heart:	(N=)	(10)	(10)	(10)	(10)
Aorta:	(N=)	(10)	(10)	(10)	(10)
Hematopoietic & Lymphatic System					
Bone marrow (femur):	(N=)	(10)	(10)	(10)	(10)
Bone marrow (sternum):	(N=)	(10)	(10)	(10)	(10)
Bone marrow (vertebra):	(N=)	(10)	(10)	(10)	(10)
Thymus:	(N=)	(10)	(10)	(10)	(10)
Lymph nodes (cervical):	(N=)	(10)	(10)	(10)	(10)
Lymph nodes (mesenteric):	(N=)	(10)	(10)	(10)	(10)
Spleen:	(N=)	(10)	(10)	(10)	(10)
Respiratory System					
Trachea:	(N=)	(10)	(10)	(10)	(10)
Lung:	(N=)	(10)	(10)	(10)	(10)
Digestive System					
Submaxillary gland:	(N=)	(10)	(10)	(10)	(10)
Sublingular gland:	(N=)	(10)	(10)	(10)	(10)
Esophagus:	(N=)	(10)	(10)	(10)	(10)
Stomach (non-glandular portion):	(N=)	(10)	(10)	(10)	(10)
Stomach (glandular portion):	(N=)	(10)	(10)	(10)	(10)
Small intestine:	(N=)	(10)	(10)	(10)	(10)
Large intestine:	(N=)	(10)	(10)	(10)	(10)
Liver:	(N=)	(10)	(10)	(10)	(10)
Pancreas:	(N=)	(10)	(10)	(10)	(10)
Urinary System					
Kidney:	(N=)	(10)	(10)	(10)	(10)
Urinary bladder:	(N=)	(10)	(10)	(10)	(10)
Genital System					
Ovary:	(N=)	(10)	(10)	(10)	(10)
Uterus:	(N=)	(10)	(10)	(10)	(10)
(B) Polyp/endometrial stromal polyp		0	1	1	1
Vagina:	(N=)	(10)	(10)	(10)	(10)
(B) Polyp		0	0	1	0
Endocrine System					
Pituitary:	(N=)	(10)	(10)	(10)	(10)
(B) Anterior adenoma		1	1	3	1
Thyroid:	(N=)	(10)	(10)	(10)	(10)
Parathyroid:	(N=)	(10)	(10)	(10)	(10)
Adrenal:	(N=)	(10)	(10)	(10)	(10)
Nervous System					
Cerebrum:	(N=)	(10)	(10)	(10)	(10)
Cerebellum:	(N=)	(10)	(10)	(10)	(10)
Brain stem:	(N=)	(10)	(10)	(10)	(10)
Spinal cord (cervical):	(N=)	(10)	(10)	(10)	(10)
Spinal cord (thoracic):	(N=)	(10)	(10)	(10)	(10)
Spinal cord (lumbar):	(N=)	(10)	(10)	(10)	(10)
Sciatic nerve:	(N=)	(10)	(10)	(10)	(10)
Musculo-Skeletal System					
Bone (sternum):	(N=)	(10)	(10)	(10)	(10)
Bone (femur):	(N=)	(10)	(10)	(10)	(10)

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm

Table 26 - 4 Histopathology - Incidence of microscopic neoplastic lesions in female rats (Satellite group)
Interim kill after 52 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	10	10	10	10
Musculo-Skeletal System《cont.》					
Bone (femur) 《cont.》:	(N=)	(10)	(10)	(10)	(10)
(B) Osteochondroma		0	0	0	1
Bone (vertebra):	(N=)	(10)	(10)	(10)	(10)
Tibio-femoral joint:	(N=)	(10)	(10)	(10)	(10)
Skeletal muscle (m. triceps surae):	(N=)	(10)	(10)	(10)	(10)
Sense Organs					
Eye:	(N=)	(10)	(10)	(10)	(10)
Harderian gland:	(N=)	(10)	(10)	(10)	(10)
Integumentary System					
Skin:	(N=)	(10)	(10)	(10)	(10)
Mammary gland:	(N=)	(10)	(10)	(10)	(10)
(B) Fibroadenoma		1	0	1	0
No. of benign neoplasms		2	2	6	3
No. of malignant neoplasms		0	0	0	0
No. of benign & malignant neoplasms		2	2	6	3
No. of animals with benign neoplasm(s)		2	2	4	2
No. of animals with malignant neoplasm(s)		0	0	0	0
No. of animals with neoplasm(s)		2	2	4	2

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm.

Table 26 - 5 Histopathology - Incidence of microscopic neoplastic lesions in female rats (Satellite group)
Interim kill after 78 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	8	9	8	8
Cardiovascular System					
Heart:	(N=)	(8)	(9)	(8)	(8)
Aorta:	(N=)	(8)	(9)	(8)	(8)
Hematopoietic & Lymphatic System					
Bone marrow (femur):	(N=)	(8)	(9)	(8)	(8)
Bone marrow (sternum):	(N=)	(8)	(9)	(8)	(8)
Bone marrow (vertebra):	(N=)	(8)	(9)	(8)	(8)
Thymus:	(N=)	(8)	(9)	(8)	(8)
Lymph nodes (cervical):	(N=)	(8)	(9)	(8)	(8)
Lymph nodes (mesenteric):	(N=)	(8)	(9)	(8)	(8)
Spleen:	(N=)	(8)	(9)	(8)	(8)
Respiratory System					
Trachea:	(N=)	(8)	(9)	(8)	(8)
Lung:	(N=)	(8)	(9)	(8)	(8)
Digestive System					
Submaxillary gland:	(N=)	(8)	(9)	(8)	(8)
Sublingular gland:	(N=)	(8)	(9)	(8)	(8)
Esophagus:	(N=)	(8)	(9)	(8)	(8)
Stomach (non-glandular portion):	(N=)	(8)	(9)	(8)	(8)
Stomach (glandular portion):	(N=)	(8)	(9)	(8)	(8)
Small intestine:	(N=)	(8)	(9)	(8)	(8)
Large intestine:	(N=)	(8)	(9)	(8)	(8)
Liver:	(N=)	(8)	(9)	(8)	(8)
Pancreas:	(N=)	(8)	(9)	(8)	(8)
Urinary System					
Kidney:	(N=)	(8)	(9)	(8)	(8)
Urinary bladder:	(N=)	(8)	(9)	(8)	(8)
Genital System					
Ovary:	(N=)	(8)	(9)	(8)	(8)
Uterus:	(N=)	(8)	(9)	(8)	(8)
(M) Adenocarcinoma		0	1	0	0
Vagina:	(N=)	(8)	(9)	(8)	(8)
(B) Polyp		0	0	0	1
Endocrine System					
Pituitary:	(N=)	(8)	(9)	(8)	(8)
(B) Anterior adenoma		6	5	4	7
Thyroid:	(N=)	(8)	(9)	(8)	(8)
(B) C-cell adenoma		0	0	1	2
Parathyroid:	(N=)	(8)	(9)	(8)	(8)
Adrenal:	(N=)	(8)	(9)	(8)	(8)
Nervous System					
Cerebrum:	(N=)	(8)	(9)	(8)	(8)
Cerebellum:	(N=)	(8)	(9)	(8)	(8)
Brain stem:	(N=)	(8)	(9)	(8)	(8)
Spinal cord (cervical):	(N=)	(8)	(9)	(8)	(8)
Spinal cord (thoracic):	(N=)	(8)	(9)	(8)	(8)
Spinal cord (lumbar):	(N=)	(8)	(9)	(8)	(8)
Sciatic nerve:	(N=)	(8)	(9)	(8)	(8)

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.

Table 26 - 6 Histopathology - Incidence of microscopic neoplastic lesions in female rats (Satellite group)
Interim kill after 78 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	8	9	8	8
Musculo-Skeletal System					
Bone (sternum) :	(N=)	(8)	(9)	(8)	(8)
Bone (femur) :	(N=)	(8)	(9)	(8)	(8)
Bone (vertebra) :	(N=)	(8)	(9)	(8)	(8)
Tibio-femoral joint:	(N=)	(8)	(9)	(8)	(8)
Skeletal muscle (m. triceps surae) :	(N=)	(8)	(9)	(8)	(8)
Sense Organs					
Eye:	(N=)	(8)	(9)	(8)	(8)
Harderian gland:	(N=)	(8)	(9)	(8)	(8)
Auricle:	(N=)	(0)	(0)	(1)	(0)
(B) Papilloma		-	-	1	-
Integumentary System					
Skin:	(N=)	(8)	(9)	(8)	(8)
(B) Lipoma		0	1	0	0
Mammary gland:	(N=)	(8)	(9)	(8)	(8)
(B) Adenoma		0	1	1	0
(B) Fibroadenoma		1	3	2	0
(M) Adenocarcinoma		1	1	0	0
No. of benign neoplasms		7	10	9	10
No. of malignant neoplasms		1	2	0	0
No. of benign & malignant neoplasms		8	12	9	10
No. of animals with benign neoplasm(s)		7	5	4	8
No. of animals with malignant neoplasm(s)		1	2	0	0
No. of animals with neoplasm(s)		7	6	4	8

(N=) : Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.

Table 26 - 7 Histopathology - Incidence of microscopic neoplastic lesions in female rats (Main group)
Terminal kill after 104 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	15	19	16	14
Cardiovascular System					
Heart:	(N=)	(15)	(19)	(16)	(14)
Aorta:	(N=)	(15)	(19)	(16)	(14)
Hematopoietic & Lymphatic System					
Bone marrow (femur) :	(N=)	(15)	(19)	(16)	(14)
Bone marrow (sternum) :	(N=)	(15)	(19)	(16)	(14)
Bone marrow (vertebra) :	(N=)	(15)	(19)	(16)	(14)
Thymus:	(N=)	(15)	(19)	(16)	(14)
Lymph nodes (cervical) :	(N=)	(15)	(19)	(16)	(14)
Lymph nodes (mesenteric) :	(N=)	(15)	(19)	(16)	(14)
Spleen:	(N=)	(15)	(19)	(16)	(14)
Respiratory System					
Trachea:	(N=)	(15)	(19)	(16)	(14)
Lung:	(N=)	(15)	(19)	(16)	(14)
Digestive System					
Submaxillary gland:	(N=)	(15)	(19)	(16)	(14)
Sublingular gland:	(N=)	(15)	(19)	(16)	(14)
Esophagus:	(N=)	(15)	(19)	(16)	(14)
Stomach (non-glandular portion) :	(N=)	(15)	(19)	(16)	(14)
Stomach (glandular portion) :	(N=)	(15)	(19)	(16)	(14)
Small intestine:	(N=)	(15)	(19)	(16)	(14)
(B) Leiomyoma		0	0	1	0
Large intestine:	(N=)	(15)	(19)	(16)	(14)
(M) Malignant histiocytoma		1	0	0	0
Liver:	(N=)	(15)	(19)	(16)	(14)
(B) Hepatocellular adenoma		1	1	0	0
Pancreas:	(N=)	(15)	(19)	(16)	(14)
(B) Islet cell adenoma		1	1	0	0
Urinary System					
Kidney:	(N=)	(15)	(19)	(16)	(14)
(B) Lipoma		0	1	0	0
Urinary bladder:	(N=)	(15)	(19)	(16)	(14)
Genital System					
Ovary:	(N=)	(15)	(19)	(16)	(14)
(B) Granulosa cell tumor		1	0	0	0
(B) Luteoma		0	0	1	0
Uterus:	(N=)	(15)	(19)	(16)	(14)
(B) Polyp/endometrial stromal polyp		3	3	1	2
(B) Granular cell tumor		1	0	0	0
(M) Adenocarcinoma		1	0	0	0
Vagina:	(N=)	(15)	(19)	(16)	(14)
Endocrine System					
Pituitary:	(N=)	(15)	(19)	(16)	(14)
(B) Anterior adenoma		12	19	12	13
(M) Anterior adenocarcinoma		1	0	0	0
Thyroid:	(N=)	(15)	(18)	(16)	(14)
(B) Follicular adenoma		0	0	1	0
(B) C-cell adenoma		1	4	2	1
Parathyroid:	(N=)	(15)	(19)	(16)	(14)
Adrenal:	(N=)	(15)	(19)	(16)	(14)

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.

Table 26 - 8 Histopathology - Incidence of microscopic neoplastic lesions in female rats (Main group)
Terminal kill after 104 weeks of treatment

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	15	19	16	14
Endocrine System《cont.》					
Adrenal《cont.》:	(N=)	(15)	(19)	(16)	(14)
(B) Cortical adenoma		0	0	1	0
(B) Pheochromocytoma		1	0	2	1
Nervous System					
Cerebrum:	(N=)	(15)	(19)	(16)	(14)
(M) Malignant reticulosis		0	1	0	0
Cerebellum:	(N=)	(15)	(19)	(16)	(14)
Brain stem:	(N=)	(15)	(19)	(16)	(14)
Spinal cord (cervical):	(N=)	(15)	(19)	(16)	(14)
Spinal cord (thoracic):	(N=)	(15)	(19)	(16)	(14)
Spinal cord (lumbar):	(N=)	(15)	(19)	(16)	(14)
Sciatic nerve:	(N=)	(15)	(19)	(16)	(14)
Musculo-Skeletal System					
Bone (sternum):	(N=)	(15)	(19)	(16)	(14)
Bone (femur):	(N=)	(15)	(19)	(16)	(14)
Bone (vertebra):	(N=)	(15)	(19)	(16)	(14)
(B) Chordoma		1	0	0	0
Bone (others):	(N=)	(4)	(1)	(0)	(1)
(B) Osteochondroma		2	0	-	1
Tibio-femoral joint:	(N=)	(15)	(19)	(16)	(14)
Skeletal muscle (m. triceps surae):	(N=)	(15)	(19)	(16)	(14)
Sense Organs					
Eye:	(N=)	(15)	(19)	(16)	(14)
Harderian gland:	(N=)	(15)	(19)	(16)	(14)
Ear:	(N=)	(0)	(1)	(0)	(1)
Integumentary System					
Skin:	(N=)	(15)	(19)	(16)	(14)
(B) Papilloma		0	0	1	0
(B) Fibroma		2	2	0	1
(B) Lipoma		2	0	1	0
Mammary gland:	(N=)	(15)	(19)	(16)	(14)
(B) Adenoma		0	1	0	0
(B) Fibroadenoma		10	13	12	10
(M) Adenocarcinoma		2	2	5	1
Body Cavities					
Abdominal cavity:	(N=)	(1)	(0)	(1)	(0)
(B) Lipoma		0	-	1	-
(M) Malignant schwannoma		1	-	0	-
No. of benign neoplasms		38	45	36	29
No. of malignant neoplasms		6	3	5	1
No. of benign & malignant neoplasms		44	48	41	30
No. of animals with benign neoplasm(s)		15	19	15	14
No. of animals with malignant neoplasm(s)		4	3	5	1
No. of animals with neoplasm(s)		15	19	15	14

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.

Table 26 - 9 Histopathology - Incidence of microscopic neoplastic lesions in female rats (Main group)
Killed in extremis or found dead

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	35	31	34	36
General Organs					
(M) Systemic histiocytic sarcoma		1	0	0	0
Cardiovascular System					
Heart:	(N=)	(35)	(31)	(34)	(36)
(B) Schwannoma		0	0	0	1
Aorta:	(N=)	(35)	(31)	(34)	(36)
Hematopoietic & Lymphatic System					
General:	(N=)	(35)	(31)	(34)	(36)
(M) Malignant lymphoma		1	1	1	2
Bone marrow (femur):	(N=)	(35)	(31)	(34)	(36)
Bone marrow (sternum):	(N=)	(35)	(31)	(34)	(36)
Bone marrow (vertebra):	(N=)	(35)	(31)	(34)	(36)
Thymus:	(N=)	(35)	(31)	(34)	(36)
Lymph nodes (cervical):	(N=)	(35)	(31)	(32)	(36)
Lymph nodes (mesenteric):	(N=)	(35)	(31)	(34)	(36)
Spleen:	(N=)	(35)	(30)	(34)	(36)
Respiratory System					
Nasal cavity:	(N=)	(2)	(0)	(3)	(1)
(M) Squamous cell carcinoma		1	-	0	0
Trachea:	(N=)	(35)	(31)	(34)	(36)
Lung:	(N=)	(35)	(31)	(34)	(36)
Digestive System					
Submaxillary gland:	(N=)	(35)	(31)	(32)	(36)
Sublingular gland:	(N=)	(35)	(31)	(32)	(36)
Esophagus:	(N=)	(35)	(31)	(34)	(36)
Stomach (non-glandular portion):	(N=)	(35)	(30)	(34)	(36)
Stomach (glandular portion):	(N=)	(35)	(30)	(34)	(36)
Small intestine:	(N=)	(35)	(31)	(34)	(36)
Large intestine:	(N=)	(35)	(31)	(34)	(36)
Liver:	(N=)	(35)	(31)	(34)	(36)
Pancreas:	(N=)	(35)	(31)	(34)	(36)
(B) Islet cell adenoma		2	1	1	1
(M) Islet cell carcinoma		0	1	0	0
Urinary System					
Kidney:	(N=)	(35)	(31)	(34)	(36)
(M) Transitional cell carcinoma		1	0	0	0
Urinary bladder:	(N=)	(35)	(31)	(34)	(36)
(B) Papilloma		0	1	0	0
Genital System					
Ovary:	(N=)	(35)	(31)	(34)	(36)
Uterus:	(N=)	(35)	(31)	(34)	(36)
(B) Polyp/endometrial stromal polyp		1	4	0	2
(M) Malignant schwannoma		0	0	0	1
< Mass not in section >		1	0	0	0
Vagina:	(N=)	(35)	(31)	(34)	(36)
(B) Polyp		1	0	0	0
(M) Leiomyosarcoma		0	0	0	1
Clitoral gland:	(N=)	(1)	(0)	(0)	(0)
(M) Squamous cell carcinoma		1	-	-	-

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.

Table 26 - 10 Histopathology - Incidence of microscopic neoplastic lesions in female rats (Main group)
Killed in extremis or found dead

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	35	31	34	36
Endocrine System					
Pituitary:	(N=)	(35)	(31)	(33)	(36)
(B) Anterior adenoma		34	29	28	31
Thyroid:	(N=)	(35)	(31)	(32)	(36)
(B) Follicular adenoma		0	2	0	0
(B) C-cell adenoma		3	3	5	1
Parathyroid:	(N=)	(33)	(31)	(32)	(36)
Adrenal:	(N=)	(35)	(31)	(34)	(36)
(B) Cortical adenoma		0	1	0	0
(B) Ganglioneuroma		0	1	0	0
(B) Pheochromocytoma		1	0	0	0
Nervous System					
Cerebrum:	(N=)	(35)	(31)	(33)	(36)
(B) Meningioma		0	1	0	0
(M) Malignant reticulosis		1	0	0	0
Cerebellum:	(N=)	(35)	(31)	(33)	(36)
(B) Granular cell tumor		0	0	1	0
Brain stem:	(N=)	(35)	(31)	(33)	(36)
Spinal cord (cervical):	(N=)	(35)	(31)	(34)	(36)
Spinal cord (thoracic):	(N=)	(35)	(31)	(34)	(36)
Spinal cord (lumbar):	(N=)	(35)	(31)	(34)	(36)
Sciatic nerve:	(N=)	(35)	(31)	(34)	(36)
Musculo-Skeletal System					
Bone (sternum):	(N=)	(35)	(31)	(34)	(36)
Bone (femur):	(N=)	(35)	(31)	(34)	(36)
Bone (vertebra):	(N=)	(35)	(31)	(34)	(36)
Bone (others):	(N=)	(2)	(2)	(2)	(4)
(B) Osteochondroma		0	0	0	2
Tibio-femoral joint:	(N=)	(35)	(31)	(34)	(36)
Skeletal muscle (m. triceps surae):	(N=)	(35)	(31)	(34)	(36)
Sense Organs					
Eye:	(N=)	(35)	(31)	(32)	(36)
Harderian gland:	(N=)	(35)	(31)	(33)	(36)
Ear:	(N=)	(3)	(1)	(1)	(2)
Auricle:	(N=)	(1)	(1)	(1)	(2)
(B) Fibroma		1	0	0	0
Integumentary System					
Skin:	(N=)	(35)	(31)	(34)	(36)
(B) Papilloma		0	1	0	0
(B) Keratoacanthoma		0	0	0	1
(B) Fibroma		2	1	2	3
(B) Lipoma		2	0	2	0
< Mass not in section >		0	0	3	0
Mammary gland:	(N=)	(35)	(31)	(34)	(36)
(B) Adenoma		1	0	0	0
(B) Fibroadenoma		13	14	12	20
(M) Adenocarcinoma		8	5	6	7

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.

Table 26 - 11 Histopathology - Incidence of microscopic neoplastic lesions in female rats (Main group)
Killed in extremis or found dead

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	35	31	34	36
No. of benign neoplasms		61	59	51	62
No. of malignant neoplasms		14	7	7	11
No. of benign & malignant neoplasms		75	66	58	73
No. of animals with benign neoplasm(s)		34	29	31	35
No. of animals with malignant neoplasm(s)		12	7	7	11
No. of animals with neoplasm(s)		34	31	31	36

Table 26 - 12 Histopathology - Incidence of microscopic neoplastic lesions in female rats (Main and satellite groups)
All animals examined

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	78	79	78	78
General Organs					
(M) Systemic histiocytic sarcoma		1	0	0	0
Cardiovascular System					
Heart:	(N=)	(78)	(79)	(78)	(78)
(B) Schwannoma		0	0	0	1
Aorta:	(N=)	(78)	(79)	(78)	(78)
Hematopoietic & Lymphatic System					
General:	(N=)	(78)	(79)	(78)	(78)
(M) Malignant lymphoma		1	1	1	2
Bone marrow (femur):	(N=)	(78)	(79)	(78)	(78)
Bone marrow (sternum):	(N=)	(78)	(79)	(78)	(78)
Bone marrow (vertebra):	(N=)	(78)	(79)	(78)	(78)
Thymus:	(N=)	(78)	(79)	(78)	(78)
Lymph nodes (cervical):	(N=)	(78)	(79)	(76)	(78)
Lymph nodes (mesenteric):	(N=)	(78)	(79)	(78)	(78)
Spleen:	(N=)	(78)	(78)	(78)	(78)
Respiratory System					
Nasal cavity:	(N=)	(2)	(0)	(3)	(1)
(M) Squamous cell carcinoma		1	-	0	0
Trachea:	(N=)	(78)	(79)	(78)	(78)
Lung:	(N=)	(78)	(79)	(78)	(78)
Digestive System					
Submaxillary gland:	(N=)	(78)	(79)	(76)	(78)
Sublingular gland:	(N=)	(78)	(79)	(76)	(78)
Esophagus:	(N=)	(78)	(79)	(78)	(78)
Stomach (non-glandular portion):	(N=)	(78)	(78)	(78)	(78)
Stomach (glandular portion):	(N=)	(78)	(78)	(78)	(78)
Small intestine:	(N=)	(78)	(79)	(78)	(78)
(B) Leiomyoma		0	0	1	0
Large intestine:	(N=)	(78)	(79)	(78)	(78)
(M) Malignant histiocytoma		1	0	0	0
Liver:	(N=)	(78)	(79)	(78)	(78)
(B) Hepatocellular adenoma		1	1	0	0
Pancreas:	(N=)	(78)	(79)	(78)	(78)
(B) Islet cell adenoma		3	2	1	1
(M) Islet cell carcinoma		0	1	0	0
Urinary System					
Kidney:	(N=)	(78)	(79)	(78)	(78)
(B) Lipoma		0	1	0	0
(M) Transitional cell carcinoma		1	0	0	0
Urinary bladder:	(N=)	(78)	(79)	(78)	(78)
(B) Papilloma		0	1	0	0
Genital System					
Ovary:	(N=)	(78)	(79)	(78)	(78)
(B) Granulosa cell tumor		1	0	0	0
(B) Luteoma		0	0	1	0
Uterus:	(N=)	(78)	(79)	(78)	(78)
(B) Polyp/endometrial stromal polyp		5	8	2	5
(B) Granular cell tumor		1	0	0	0
(M) Adenocarcinoma		1	1	0	0

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.

Table 26 - 13 Histopathology - Incidence of microscopic neoplastic lesions in female rats (Main and satellite groups)
All animals examined

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	78	79	78	78
Genital System《cont.》					
Uterus《cont.》:	(N=)	(78)	(79)	(78)	(78)
(M) Malignant schwannoma		0	0	0	1
< Mass not in section >		1	0	0	0
Vagina:	(N=)	(78)	(79)	(78)	(78)
(B) Polyp		1	0	1	1
(M) Leiomyosarcoma		0	0	0	1
Clitoral gland:	(N=)	(1)	(0)	(0)	(1)
(M) Squamous cell carcinoma		1	-	-	0
Endocrine System					
Pituitary:	(N=)	(78)	(79)	(77)	(78)
(B) Anterior adenoma		54	54	47	52
(M) Anterior adenocarcinoma		1	0	0	0
Thyroid:	(N=)	(78)	(78)	(76)	(78)
(B) Follicular adenoma		0	2	1	0
(B) C-cell adenoma		4	7	8	4
Parathyroid:	(N=)	(76)	(79)	(76)	(78)
Adrenal:	(N=)	(78)	(79)	(78)	(78)
(B) Cortical adenoma		0	1	1	0
(B) Ganglioneuroma		0	1	0	0
(B) Pheochromocytoma		2	0	2	1
Nervous System					
Cerebrum:	(N=)	(78)	(79)	(77)	(78)
(B) Meningioma		0	1	0	0
(M) Malignant reticulosis		1	1	0	0
Cerebellum:	(N=)	(78)	(79)	(77)	(78)
(B) Granular cell tumor		0	0	1	0
Brain stem:	(N=)	(78)	(79)	(77)	(78)
Spinal cord (cervical):	(N=)	(78)	(79)	(78)	(78)
Spinal cord (thoracic):	(N=)	(78)	(79)	(78)	(78)
Spinal cord (lumbar):	(N=)	(78)	(79)	(78)	(78)
Sciatic nerve:	(N=)	(78)	(79)	(78)	(78)
Musculo-Skeletal System					
Bone (sternum):	(N=)	(78)	(79)	(78)	(78)
Bone (femur):	(N=)	(78)	(79)	(78)	(78)
(B) Osteochondroma		0	0	0	1
Bone (vertebra):	(N=)	(78)	(79)	(78)	(78)
(B) Chordoma		1	0	0	0
Bone (others):	(N=)	(6)	(3)	(2)	(5)
(B) Osteochondroma		2	0	0	3
Tibio-femoral joint:	(N=)	(78)	(79)	(78)	(78)
Skeletal muscle (m. triceps surae):	(N=)	(78)	(79)	(78)	(78)
Sense Organs					
Eye:	(N=)	(78)	(79)	(76)	(78)
Harderian gland:	(N=)	(78)	(79)	(77)	(78)
Ear:	(N=)	(3)	(2)	(1)	(3)
Auricle:	(N=)	(3)	(1)	(2)	(3)
(B) Papilloma		0	0	1	0
(B) Fibroma		1	0	0	0

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.

Table 26 - 14 Histopathology - Incidence of microscopic neoplastic lesions in female rats (Main and satellite groups)
All animals examined

Site & Lesion	Dose (ppm)	0	3000	10000	30000
	No. of animals examined	78	79	78	78
Integumentary System					
Skin:	(N=)	(78)	(79)	(78)	(78)
(B) Papilloma		0	1	1	0
(B) Keratoacanthoma		0	0	0	1
(B) Fibroma		4	3	2	4
(B) Lipoma		4	1	3	0
< Mass not in section >		0	0	3	0
Mammary gland:	(N=)	(78)	(79)	(77)	(78)
(B) Adenoma		1	2	1	0
(B) Fibroadenoma		25	30	27	30
(M) Adenocarcinoma		11	8	11	8
Body Cavities					
Abdominal cavity:	(N=)	(1)	(2)	(1)	(0)
(B) Lipoma		0	0	1	-
(M) Malignant schwannoma		1	0	0	-
No. of benign neoplasms		110	116	102	104
No. of malignant neoplasms		21	12	12	12
No. of benign & malignant neoplasms		131	128	114	116
No. of animals with benign neoplasm(s)		60	55	54	59
No. of animals with malignant neoplasm(s)		17	12	12	12
No. of animals with neoplasm(s)		60	58	54	60

(N=): Number of animals examined microscopically at the site.
Malignancy: (B), benign neoplasm; (M), malignant neoplasm.