

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

F1_Rev.1_RE

NTP Study Number: C08010

Lock Date: 07/12/2011

Cage Range: ALL

Date Range: ALL

Reasons For Removal: ALL

Removal Date Range: ALL

Treatment Groups: Include ALL

Study Gender: Both

TDMSE Version: 3.0.2.3_002

PWG Approval Date: NONE

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Lab: BNW

WISTAR HAN RATS MALE	DAY ON TEST	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
Control	ANIMAL ID	9	9	9	9	9	9	9	9	9	9
		3	3	3	3	3	3	3	3	3	3
		0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	1
		1	2	3	4	5	6	7	8	9	0

* TOTALS

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	+	10
Liver	+	+	+	+	+	+	+	+	+	+	+	10
Pancreas	+	+	+	+	+	+	+	+	+	+	+	10
Salivary Glands	+	+	+	+	+	+	+	+	+	+	+	10
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	+	10
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	+	10
Tooth	+											2

CARDIOVASCULAR SYSTEM

Blood Vessel	+	+	+	+	+	+	+	+	+	+	+	10
--------------	---	---	---	---	---	---	---	---	---	---	---	----

* .. Total animals with tissue examined microscopically; Total animals with tumor

M .. Missing tissue

+ .. Tissue examined microscopically

A .. Autolysis precludes evaluation

X .. Lesion present

BLANK .. Not examined microscopically

I .. Insufficient tissue

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Lab: BNW

WISTAR HAN RATS MALE	DAY ON TEST											
		0 0 9 3										
Control	ANIMAL ID											* TOTALS
		0 0 0 0 0 1	0 0 0 0 0 2	0 0 0 0 0 3	0 0 0 0 0 4	0 0 0 0 0 5	0 0 0 0 0 6	0 0 0 0 0 7	0 0 0 0 0 8	0 0 0 0 0 9	0 0 0 0 0 0	
Heart		+ + + + + + + + + +										10
ENDOCRINE SYSTEM												
Adrenal Cortex		+ + + + + + + + + +										10
Adrenal Medulla		+ + + + + + + + + +										10
Islets, Pancreatic		+ + + + + + + + + +										10
Parathyroid Gland		+ + + + + + + + + +										10
Pituitary Gland		+ + + + + + + + + +										10
Thyroid Gland		+ + + + + + + + + +										10
GENERAL BODY SYSTEM												
NONE												
GENITAL SYSTEM												
Epididymis		+ + + + + + + + + +										10
Preputial Gland		+ + + + + + + + + +										10
Prostate		+ + + + + + + + + +										10
Seminal Vesicle		+ + + + + + + + + +										10
Testes		+ + + + + + + + + +										10

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

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DAY ON TEST

0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
9	9	9	9	9	9	9	9	9	9	9
3	3	3	3	3	3	3	3	3	3	3
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	1
1	2	3	4	5	6	7	8	9	0	

* TOTALS

WISTAR HAN RATS MALE

Control

ANIMAL ID

HEMATOPOIETIC SYSTEM

Bone Marrow

+ + + + + + + + + + 10

Lymph Node, Bronchial

+ + + + + + + + + + 10

Lymph Node, Mandibular

M M + + + M M + + + 6

Lymph Node, Mediastinal

+ + + + + + + M + + 9

Lymph Node, Mesenteric

+ + + + + + + + + + 10

Spleen

+ + + + + + + + + + 10

Thymus

+ + + + + + + + + + 10

INTEGUMENTARY SYSTEM

Mammary Gland

M M M M M M M + + M 2

Skin

+ + + + + + + + + + 10

MUSCULOSKELETAL SYSTEM

Bone

+ + + + + + + + + + 10

NERVOUS SYSTEM

Brain

+ + + + + + + + + + 10

RESPIRATORY SYSTEM

* .. Total animals with tissue examined microscopically; Total animals with tumor

M .. Missing tissue

+ .. Tissue examined microscopically

A .. Autolysis precludes evaluation

X .. Lesion present

BLANK .. Not examined microscopically

I .. Insufficient tissue

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Lab: BNW

| WISTAR HAN RATS MALE | DAY ON TEST | | | | | | | | | | |
|------------------------------|-------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------|
| | | 0
0
9
3 | |
| Control | ANIMAL ID | 0
0
0
0 | * TOTALS |
| | | 1
2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | |
| Larynx | | + | + | + | + | + | + | + | + | + | 10 |
| Lung | | + | + | + | + | + | + | + | + | + | 10 |
| Nose | | + | + | + | + | + | + | + | + | + | 10 |
| Trachea | | + | + | + | + | + | + | + | + | + | 10 |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | |
| Eye | | + | + | + | + | + | + | + | + | + | 10 |
| Harderian Gland | | + | + | + | + | + | + | + | + | + | 10 |
| URINARY SYSTEM | | | | | | | | | | | |
| Kidney | | + | + | + | + | + | + | + | + | + | 10 |
| Urinary Bladder | | + | + | + | + | + | + | + | + | + | 10 |
| SYSTEMIC LESIONS | | | | | | | | | | | |
| Multiple Organ | | + | + | + | + | + | + | + | + | + | 10 |

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

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Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS MALE
6.25 ppm | DAY ON TEST
ANIMAL ID | | | | | | | | | | |
|----------------------------------|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------|
| | | 0
0
9
3 | 0
0
9
3 |
| | | 0
0
2
0
1 | 0
0
2
0
2 | 0
0
2
0
5 | 0
0
2
0
6 | 0
0
2
0
7 | 0
0
2
0
8 | 0
0
2
0
9 | 0
0
2
0
0 | 0
0
2
1
0 | |

* TOTALS

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

Skin

+

1

MUSCULOSKELETAL SYSTEM

NONE

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

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Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS MALE
6.25 ppm | DAY ON TEST
ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|----------------------------------|--------------------------|----------|---|---|---|---|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| | | * TOTALS | | | | | | | | | |

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

| | | | | | | | | | | | | |
|---------|---|---|---|---|---|---|---|---|---|---|---|----|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Lung | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Nose | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | 10 |

SPECIAL SENSES SYSTEM

| | | | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|---|---|---|----|
| Eye | + | + | + | + | + | + | + | + | + | + | + | 10 |
|-----|---|---|---|---|---|---|---|---|---|---|---|----|

URINARY SYSTEM

NONE

SYSTEMIC LESIONS

| | | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|---|----|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | 10 |
|----------------|---|---|---|---|---|---|---|---|---|---|---|----|

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

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First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

DAY ON TEST

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |

WISTAR HAN RATS MALE

12.5 ppm

ANIMAL ID

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | |

* TOTALS

ALIMENTARY SYSTEM

Tooth

+

1

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

Lymph Node, Mesenteric

+

1

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

NONE

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS MALE
12.5 ppm | DAY ON TEST
ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|----------------------------------|--------------------------|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

* TOTALS

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

| | | | | | | | | | | | | |
|---------|---|---|---|---|---|---|---|---|---|---|---|----|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Lung | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Nose | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | 10 |

SPECIAL SENSES SYSTEM

| | | | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|--|---|---|---|---|
| Eye | + | + | + | + | + | + | + | | + | + | + | 9 |
|-----|---|---|---|---|---|---|---|--|---|---|---|---|

URINARY SYSTEM

NONE

SYSTEMIC LESIONS

| | | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|---|----|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | 10 |
|----------------|---|---|---|---|---|---|---|---|---|---|---|----|

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

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Lab: BNW

| WISTAR HAN RATS MALE
25 ppm | DAY ON TEST
ANIMAL ID | | | | | | | | | | |
|--------------------------------|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | | 0
0
9
3 |
| | | 0
0
6
0
1 | 0
0
6
0
2 | 0
0
6
0
3 | 0
0
6
0
4 | 0
0
6
0
5 | 0
0
6
0
6 | 0
0
6
0
7 | 0
0
6
0
8 | 0
0
6
0
9 | 0
0
6
1
0 |

* TOTALS

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

NONE

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

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Lab: BNW

| WISTAR HAN RATS MALE
25 ppm | DAY ON TEST
ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|--------------------------------|--------------------------|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

* TOTALS

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

| | | | | | | | | | | | |
|---------|---|---|---|---|---|---|---|---|---|---|----|
| Larynx | + | + | + | + | + | + | + | + | + | + | 10 |
| Lung | + | + | + | + | + | + | + | + | + | + | 10 |
| Nose | + | + | + | + | + | + | + | + | + | + | 10 |
| Trachea | + | + | + | + | + | + | + | + | + | + | 10 |

SPECIAL SENSES SYSTEM

| | | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|---|---|----|
| Eye | + | + | + | + | + | + | + | + | + | + | 10 |
|-----|---|---|---|---|---|---|---|---|---|---|----|

URINARY SYSTEM

NONE

SYSTEMIC LESIONS

| | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|----|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | 10 |
|----------------|---|---|---|---|---|---|---|---|---|---|----|

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

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Lab: BNW

| WISTAR HAN RATS MALE
50 ppm | DAY ON TEST
ANIMAL ID | | | | | | | | | | |
|--------------------------------|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | | 0
0
9
3 |
| | | 0
0
8
0
1 | 0
0
8
0
2 | 0
0
8
0
3 | 0
0
8
0
4 | 0
0
8
0
5 | 0
0
8
0
6 | 0
0
8
0
7 | 0
0
8
0
8 | 0
0
8
0
9 | 0
0
8
0
0 |

* TOTALS

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

Adrenal Cortex

+

1

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

NONE

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

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First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS MALE | 50 ppm | DAY ON TEST | | | | | | | | | | |
|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--|
| | | | 0
0
9
3 | |
| ANIMAL ID | | | | | | | | | | | * TOTALS | |
| | 0
0
8
0
1 | 0
0
8
0
2 | 0
0
8
0
3 | 0
0
8
0
4 | 0
0
8
0
5 | 0
0
8
0
6 | 0
0
8
0
7 | 0
0
8
0
8 | 0
0
8
0
9 | 0
0
8
0
0 | 0
0
8
0
1 | |

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

| | | | | | | | | | | | | |
|---------|---|---|---|---|---|---|---|---|---|---|---|----|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Lung | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Nose | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | 10 |

SPECIAL SENSES SYSTEM

| | | | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|---|---|---|----|
| Eye | + | + | + | + | + | + | + | + | + | + | + | 10 |
|-----|---|---|---|---|---|---|---|---|---|---|---|----|

URINARY SYSTEM

| | | | | | | | | | | | | |
|--------|---|--|--|--|--|--|--|--|--|--|--|---|
| Kidney | + | | | | | | | | | | | 1 |
|--------|---|--|--|--|--|--|--|--|--|--|--|---|

SYSTEMIC LESIONS

| | | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|---|----|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | 10 |
|----------------|---|---|---|---|---|---|---|---|---|---|---|----|

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

DAY ON TEST

WISTAR HAN RATS MALE**100 ppm**

ANIMAL ID

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | |

*** TOTALS****ALIMENTARY SYSTEM**

| | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|---|---|---|---|---|----|
| Esophagus | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | 10 |
| Liver | + | + | + | + | + | + | + | + | + | + | 10 |
| Pancreas | + | + | + | + | + | + | + | + | + | + | 10 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | 10 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | 10 |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | 10 |

CARDIOVASCULAR SYSTEM

| | | | | | | | | | | | |
|--------------|---|---|---|---|---|---|---|---|---|---|----|
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | 10 |
| Heart | + | + | + | + | + | + | + | + | + | + | 10 |

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

DAY ON TEST

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | |

WISTAR HAN RATS MALE

100 ppm

ANIMAL ID

* TOTALS

ENDOCRINE SYSTEM

Adrenal Cortex

+ + + + + + + + + + 10

Adrenal Medulla

+ + + + + + + + + + 10

Islets, Pancreatic

+ + + + + + + + + + 10

Parathyroid Gland

+ + M + + + + + + + 9

Pituitary Gland

+ + + + + + + + + + 10

Thyroid Gland

+ + + + + + + + + + 10

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Epididymis + + + + + + + + + + 10

Preputial Gland

+ + + + + + + + + + 10

Prostate

+ + + + + + + + + + 10

Seminal Vesicle

+ + + + + + + + + + 10

Testes

+ + + + + + + + + + 10

HEMATOPOIETIC SYSTEM

* .. Total animals with tissue examined microscopically; Total animals with tumor

M .. Missing tissue

+ .. Tissue examined microscopically

A .. Autolysis precludes evaluation

X .. Lesion present

BLANK .. Not examined microscopically

I .. Insufficient tissue

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS MALE
100 ppm | DAY ON TEST
ANIMAL ID | | | | | | | | | | | * TOTALS |
|---------------------------------|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------|
| | | 0
0
9
3 | |
| Bone Marrow | | + | + | + | + | + | + | + | + | + | + | 10 |
| Lymph Node, Bronchial | | + | + | + | + | + | + | + | + | + | M | 9 |
| Lymph Node, Mandibular | | M | + | + | + | + | + | + | + | + | + | 9 |
| Lymph Node, Mediastinal | | + | + | + | + | + | + | + | + | + | + | 10 |
| Lymph Node, Mesenteric | | + | + | + | + | + | + | + | + | + | + | 10 |
| Spleen | | + | + | + | + | + | + | + | + | + | + | 10 |
| Thymus | | + | + | + | + | + | + | + | + | + | + | 10 |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | |
| Mammary Gland | | + | M | M | M | M | + | M | M | + | M | 3 |
| Skin | | + | + | + | + | + | + | + | + | + | + | 10 |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | |
| Bone | | + | + | + | + | + | + | + | + | + | + | 10 |
| NERVOUS SYSTEM | | | | | | | | | | | | |
| Brain | | + | + | + | + | + | + | + | + | + | + | 10 |
| RESPIRATORY SYSTEM | | | | | | | | | | | | |
| Larynx | | + | + | + | + | + | + | + | + | + | + | 10 |

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS MALE
100 ppm | DAY ON TEST
ANIMAL ID | | | | | | | | | | | * TOTALS |
|---------------------------------|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------|
| | | 0
0
9
3 | |
| Lung | | + | + | + | + | + | + | + | + | + | + | 10 |
| Nose | | + | + | + | + | + | + | + | + | + | + | 10 |
| Trachea | | + | + | + | + | + | + | + | + | + | + | 10 |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | |
| Eye | | + | + | + | + | + | + | + | + | + | + | 10 |
| Harderian Gland | | + | + | + | + | + | + | + | + | + | + | 10 |
| URINARY SYSTEM | | | | | | | | | | | | |
| Kidney | | + | + | + | + | + | + | + | + | + | + | 10 |
| Urinary Bladder | | + | + | + | + | + | + | + | + | + | + | 10 |
| SYSTEMIC LESIONS | | | | | | | | | | | | |
| Multiple Organ | | + | + | + | + | + | + | + | + | + | + | 10 |

*** END OF MALE DATA ***

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|------------------------|-------------|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Control | ANIMAL ID | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

* TOTALS

ALIMENTARY SYSTEM

| | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|---|---|---|---|---|----|
| Esophagus | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | 10 |
| Liver | + | + | + | + | + | + | + | + | + | + | 10 |
| Pancreas | + | + | + | + | + | + | + | + | + | + | 10 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | 10 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | 10 |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | 10 |

CARDIOVASCULAR SYSTEM

| | | | | | | | | | | | |
|--------------|---|---|---|---|---|---|---|---|---|---|----|
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | 10 |
| Heart | + | + | + | + | + | + | + | + | + | + | 10 |

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|------------------------|-------------|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Control | ANIMAL ID | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

* TOTALS

ENDOCRINE SYSTEM

| | | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|---|----|
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | 10 |
| Adrenal Medulla | + | + | + | + | + | + | + | + | + | + | 10 |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | 10 |
| Parathyroid Gland | M | + | M | + | + | + | + | + | + | + | 8 |
| Pituitary Gland | + | + | + | + | + | + | + | + | + | + | 10 |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | 10 |

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

| | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|----|
| Clitoral Gland | + | + | + | + | + | + | + | + | + | + | 10 |
| Ovary | + | + | + | + | + | + | + | + | + | + | 10 |
| Uterus | + | + | + | + | + | + | + | + | + | + | 10 |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|---|---|---|----|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | 10 |
| Lymph Node, Bronchial | + | + | + | + | M | + | + | M | + | + | 8 |

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | |
|-------------------------------|-------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----|
| | | 0
0
9
3 | |
| Control | ANIMAL ID | 0
0
1
0
1 | 0
0
1
0
2 | 0
0
1
0
3 | 0
0
1
0
4 | 0
0
1
0
5 | 0
0
1
0
6 | 0
0
1
0
7 | 0
0
1
0
8 | 0
0
1
0
9 | 0
0
1
0
0 | |
| Lymph Node, Mandibular | | + | + | + | + | + | + | + | + | + | + | 10 |
| Lymph Node, Mediastinal | | + | + | + | + | + | M | + | + | + | + | 9 |
| Lymph Node, Mesenteric | | + | + | + | + | + | + | + | + | + | + | 10 |
| Spleen | | + | + | + | + | + | + | + | + | + | + | 10 |
| Thymus | | + | + | + | + | + | + | + | + | + | + | 10 |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | |
| Mammary Gland | | + | + | + | + | + | + | + | + | + | + | 10 |
| Skin | | + | + | + | + | + | + | + | + | + | + | 10 |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | |
| Bone | | + | + | + | + | + | + | + | + | + | + | 10 |
| NERVOUS SYSTEM | | | | | | | | | | | | |
| Brain | | + | + | + | + | + | + | + | + | + | + | 10 |
| RESPIRATORY SYSTEM | | | | | | | | | | | | |
| Larynx | | + | + | + | + | + | + | + | + | + | + | 10 |
| Lung | | + | + | + | + | + | + | + | + | + | + | 10 |
| Nose | | + | + | + | + | + | + | + | + | + | + | 10 |

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS FEMALE | DAY ON TEST | | | | | | | | | | | |
|------------------------------|-------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----|
| | | 0
0
9
3 | |
| Control | ANIMAL ID | | | | | | | | | | | |
| | | 0
0
1
0
1 | |
| Trachea | | + + + + + + + + + + | | | | | | | | | | 10 |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | |
| Eye | | + + + + + + + + + + | | | | | | | | | | 10 |
| Harderian Gland | | + + + + + + + + + + | | | | | | | | | | 10 |
| URINARY SYSTEM | | | | | | | | | | | | |
| Kidney | | + + + + + + + + + + | | | | | | | | | | 10 |
| Urinary Bladder | | + + + + + + + + + + | | | | | | | | | | 10 |
| SYSTEMIC LESIONS | | | | | | | | | | | | |
| Multiple Organ | | + + + + + + + + + + | | | | | | | | | | 10 |

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS FEMALE
6.25 ppm | DAY ON TEST
ANIMAL ID | | | | | | | | | | |
|------------------------------------|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | | 0
0
9
3 |
| | | 0
0
3
1 | 0
0
3
2 | 0
0
3
3 | 0
0
3
4 | 0
0
5 | 0
0
6 | 0
0
7 | 0
0
8 | 0
0
9 | 0
0
0 |

* TOTALS

ALIMENTARY SYSTEM

Pancreas

+

1

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

NONE

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS FEMALE
6.25 ppm | DAY ON TEST
ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|------------------------------------|--------------------------|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

* TOTALS

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

| | | | | | | | | | | | |
|---------|---|---|---|---|---|---|---|---|---|---|----|
| Larynx | + | + | + | + | + | + | + | + | + | + | 10 |
| Lung | + | + | + | + | + | + | + | + | + | + | 10 |
| Nose | + | + | + | + | + | + | + | + | + | + | 10 |
| Trachea | + | + | + | + | + | + | + | + | + | + | 10 |

SPECIAL SENSES SYSTEM

| | | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|---|---|----|
| Eye | + | + | + | + | + | + | + | + | + | + | 10 |
|-----|---|---|---|---|---|---|---|---|---|---|----|

URINARY SYSTEM

NONE

SYSTEMIC LESIONS

| | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|----|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | 10 |
|----------------|---|---|---|---|---|---|---|---|---|---|----|

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS FEMALE
12.5 ppm | DAY ON TEST
ANIMAL ID | | | | | | | | | | |
|------------------------------------|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | | 0
0
9
3 |
| | | 0
0
5
0
1 | 0
0
5
0
2 | 0
0
5
0
3 | 0
0
5
0
4 | 0
0
5
0
5 | 0
0
5
0
6 | 0
0
5
0
7 | 0
0
5
0
8 | 0
0
5
0
9 | 0
0
5
0
0 |

* TOTALS

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Ovary

+

1

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

NONE

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

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Lab: BNW

| WISTAR HAN RATS FEMALE
12.5 ppm | DAY ON TEST
ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|------------------------------------|--------------------------|----------|---|---|---|---|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| | | * TOTALS | | | | | | | | | |

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

| | | | | | | | | | | | | |
|---------|---|---|---|---|---|---|---|---|---|---|---|----|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Lung | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Nose | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Trachea | + | + | + | + | + | | + | + | + | + | + | 9 |

SPECIAL SENSES SYSTEM

| | | | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|---|---|---|----|
| Eye | + | + | + | + | + | + | + | + | + | + | + | 10 |
|-----|---|---|---|---|---|---|---|---|---|---|---|----|

URINARY SYSTEM

| | | | | | | | | | | | | |
|--------|---|--|--|--|--|--|--|--|--|--|--|---|
| Kidney | + | | | | | | | | | | | 1 |
|--------|---|--|--|--|--|--|--|--|--|--|--|---|

SYSTEMIC LESIONS

| | | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|---|----|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | 10 |
|----------------|---|---|---|---|---|---|---|---|---|---|---|----|

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

| .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS FEMALE
25 ppm | DAY ON TEST
ANIMAL ID | | | | | | | | | | |
|----------------------------------|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | | 0
0
9
3 |
| | | 0
0
7
0
1 | 0
0
7
0
2 | 0
0
7
0
3 | 0
0
7
0
4 | 0
0
7
0
5 | 0
0
7
0
6 | 0
0
7
0
7 | 0
0
7
0
8 | 0
0
7
0
9 | 0
0
7
1
0 |

* TOTALS

ALIMENTARY SYSTEM

NONE

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

NONE

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

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Experiment Number: 08010 - 01

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First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS FEMALE
25 ppm | DAY ON TEST
ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|----------------------------------|--------------------------|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| | | | | | | | | | | | |

* TOTALS

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

| | | | | | | | | | | | | |
|---------|---|---|---|---|---|---|---|---|---|---|---|----|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Lung | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Nose | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | 10 |

SPECIAL SENSES SYSTEM

| | | | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|
| Eye | + | I | + | + | + | + | + | + | + | + | + | 9 |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|

URINARY SYSTEM

NONE

SYSTEMIC LESIONS

| | | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|---|----|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | 10 |
|----------------|---|---|---|---|---|---|---|---|---|---|---|----|

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

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Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS FEMALE
50 ppm | DAY ON TEST
ANIMAL ID | | | | | | | | | | |
|----------------------------------|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | | 0
0
9
3 |
| | | 0
0
9
0 |

* TOTALS

ALIMENTARY SYSTEM

Mesentery

+

1

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

MUSCULOSKELETAL SYSTEM

NONE

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS FEMALE
50 ppm | DAY ON TEST
ANIMAL ID | | | | | | | | | | |
|----------------------------------|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | | 0
0
9
3 |
| | | 0
0
9
0
1 | 0
0
9
0
2 | 0
0
9
0
3 | 0
0
9
0
4 | 0
0
9
0
5 | 0
0
9
0
6 | 0
0
9
0
7 | 0
0
9
0
8 | 0
0
9
0
9 | 0
0
9
1
0 |

* TOTALS

NERVOUS SYSTEM

NONE

RESPIRATORY SYSTEM

| | | | | | | | | | | | | |
|---------|---|---|---|---|---|---|---|---|---|---|---|----|
| Larynx | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Lung | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Nose | + | + | + | + | + | + | + | + | + | + | + | 10 |
| Trachea | + | + | + | + | + | + | + | + | + | + | + | 10 |

SPECIAL SENSES SYSTEM

| | | | | | | | | | | | | |
|-----|---|---|---|--|---|---|---|---|---|---|---|---|
| Eye | + | + | + | | + | + | + | + | + | + | + | 9 |
|-----|---|---|---|--|---|---|---|---|---|---|---|---|

URINARY SYSTEM

NONE

SYSTEMIC LESIONS

| | | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|---|----|
| Multiple Organ | + | + | + | + | + | + | + | + | + | + | + | 10 |
|----------------|---|---|---|---|---|---|---|---|---|---|---|----|

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

| .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS FEMALE
100 ppm | DAY ON TEST
ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|-----------------------------------|--------------------------|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |

* TOTALS

ALIMENTARY SYSTEM

| | | | | | | | | | | | |
|---------------------------|---|---|---|---|---|---|---|---|---|---|----|
| Esophagus | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Cecum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Colon | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Large, Rectum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Duodenum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Ileum | + | + | + | + | + | + | + | + | + | + | 10 |
| Intestine Small, Jejunum | + | + | + | + | + | + | + | + | + | + | 10 |
| Liver | + | + | + | + | + | + | + | + | + | + | 10 |
| Pancreas | + | + | + | + | + | + | + | + | + | + | 10 |
| Salivary Glands | + | + | + | + | + | + | + | + | + | + | 10 |
| Stomach, Forestomach | + | + | + | + | + | + | + | + | + | + | 10 |
| Stomach, Glandular | + | + | + | + | + | + | + | + | + | + | 10 |

CARDIOVASCULAR SYSTEM

| | | | | | | | | | | | |
|--------------|---|---|---|---|---|---|---|---|---|---|----|
| Blood Vessel | + | + | + | + | + | + | + | + | + | + | 10 |
| Heart | + | + | + | + | + | + | + | + | + | + | 10 |

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS FEMALE
100 ppm | DAY ON TEST
ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|-----------------------------------|--------------------------|----------|---|---|---|---|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| | | * TOTALS | | | | | | | | | |

ENDOCRINE SYSTEM

| | | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|---|----|
| Adrenal Cortex | + | + | + | + | + | + | + | + | + | + | 10 |
| Adrenal Medulla | + | + | + | + | + | + | + | + | + | M | 9 |
| Islets, Pancreatic | + | + | + | + | + | + | + | + | + | + | 10 |
| Parathyroid Gland | + | + | + | + | M | + | + | + | + | + | 9 |
| Pituitary Gland | + | + | + | + | + | + | + | + | + | + | 10 |
| Thyroid Gland | + | + | + | + | + | + | + | + | + | + | 10 |

GENERAL BODY SYSTEM

| | | | | | | | | | | | |
|------|--|--|--|--|--|--|--|--|--|--|--|
| NONE | | | | | | | | | | | |
|------|--|--|--|--|--|--|--|--|--|--|--|

GENITAL SYSTEM

| | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|----|
| Clitoral Gland | + | + | + | + | + | + | + | + | + | + | 10 |
| Ovary | + | + | + | + | + | + | + | + | + | + | 10 |
| Uterus | + | + | + | + | + | + | + | + | + | + | 10 |

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|---|---|---|----|
| Bone Marrow | + | + | + | + | + | + | + | + | + | + | 10 |
| Lymph Node, Bronchial | + | + | + | + | + | + | + | + | + | + | 10 |

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

Experiment Number: 08010 - 01

Test Type: 90-DAY

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

2,3-Pentanedione

CAS Number: 600-14-6

Date Report Requested: 04/29/2016

Time Report Requested: 09:07:39

First Dose M/F: 09/13/10 / 09/14/10

Lab: BNW

| WISTAR HAN RATS FEMALE
100 ppm | DAY ON TEST
ANIMAL ID | | | | | | | | | | | * TOTALS |
|-----------------------------------|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------|
| | | 0
0
9
3 | |
| Lymph Node, Mandibular | | + | + | + | + | + | + | + | + | + | + | 10 |
| Lymph Node, Mediastinal | | + | + | + | + | + | + | + | + | + | + | 9 |
| Lymph Node, Mesenteric | | + | + | + | + | + | + | + | + | + | + | 10 |
| Spleen | | + | + | + | + | + | + | + | + | + | + | 10 |
| Thymus | | + | + | + | + | + | + | + | + | + | + | 10 |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | |
| Mammary Gland | | + | + | + | + | + | + | + | + | + | + | 10 |
| Skin | | + | + | + | + | + | + | + | + | + | + | 10 |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | |
| Bone | | + | + | + | + | + | + | + | + | + | + | 10 |
| NERVOUS SYSTEM | | | | | | | | | | | | |
| Brain | | + | + | + | + | + | + | + | + | + | + | 10 |
| RESPIRATORY SYSTEM | | | | | | | | | | | | |
| Larynx | | + | + | + | + | + | + | + | + | + | + | 10 |
| Lung | | + | + | + | + | + | + | + | + | + | + | 10 |
| Nose | | + | + | + | + | + | + | + | + | + | + | 10 |

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

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Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL

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Lab: BNW

| WISTAR HAN RATS FEMALE
100 ppm | DAY ON TEST
ANIMAL ID | | | | | | | | | | | * TOTALS |
|-----------------------------------|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------|
| | | 0
0
9
3 | |
| Trachea | | + | + | + | + | + | + | + | + | + | + | 10 |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | |
| Eye | | + | + | + | + | + | + | + | + | + | + | 10 |
| Harderian Gland | | + | + | + | + | + | + | + | + | + | + | 10 |
| URINARY SYSTEM | | | | | | | | | | | | |
| Kidney | | + | + | + | + | + | + | + | + | + | + | 10 |
| Urinary Bladder | | + | + | + | + | + | + | + | + | + | + | 10 |
| SYSTEMIC LESIONS | | | | | | | | | | | | |
| Multiple Organ | | + | + | + | + | + | + | + | + | + | + | 10 |

*** END OF REPORT ***

* .. Total animals with tissue examined microscopically; Total animals with tumor

+ .. Tissue examined microscopically

X .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically