

**Experiment Number:** 20701 - 01  
**Test Type:** 90-DAY  
**Route:** RESPIRATORY EXPOSURE NASAL  
**Species/Strain:** RATS/Wistar Han

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**  
Nanoscale material (Fullerene-C60 1 micron)  
**CAS Number:** 99685-96-8

**Date Report Requested:** 02/22/2013  
**Time Report Requested:** 07:58:31  
**First Dose M/F:** 11/05/07 / 11/05/07  
**Lab:** BNW

F2\_Rev.1\_RE

**NTP Study Number:** C20701  
**Lock Date:** 02/24/2009  
**Cage Range:** ALL  
**Date Range:** ALL  
**Reasons For Removal:** ALL  
**Removal Date Range:** ALL  
**Treatment Groups:** Include ALL  
**Study Gender:** Both  
**TDMSE Version:** 3.0.1.1\_001  
**PWG Approval Date:** NONE

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WISTAR HAN RATS MALE	DAY ON TEST										* TOTALS
	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	
0 mg/m3	0 1 0 0 1	0 1 0 0 2	0 1 0 0 3	0 1 0 0 4	0 1 0 0 5	0 1 0 0 6	0 1 0 0 7	0 1 0 0 8	0 1 0 0 9	0 1 0 0 0	

**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  
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		0	0	0	0	0	0	0	0	0	0
<b>WISTAR HAN RATS MALE</b>	DAY ON TEST	0	0	0	0	0	0	0	0	0	0
		8	8	8	8	8	8	8	8	8	8
		9	9	9	9	9	9	9	9	9	9
	<b>0 mg/m3</b>										
	ANIMAL ID	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	0
		0	0	0	0	0	0	0	0	0	1
<b>* TOTALS</b>											

**ENDOCRINE SYSTEM**

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Parathyroid Gland	+	+	M	+	+	+	+	+	+	+	<b>9</b>
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**GENERAL BODY SYSTEM**

NONE

**GENITAL SYSTEM**

Epididymis	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Preputial Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Prostate	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Testes	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**HEMATOPOIETIC SYSTEM**

\* .. Total animals with tissue examined microscopically; Total animals with tumor  
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WISTAR HAN RATS MALE 0 mg/m3	DAY ON TEST										* TOTALS
	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	
	ANIMAL ID										
	0 1 0 0 1	0 1 0 0 2	0 1 0 0 3	0 1 0 0 4	0 1 0 0 5	0 1 0 0 6	0 1 0 0 7	0 1 0 0 8	0 1 0 0 9	0 1 0 0 0	
Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	+	+	+	+	M	+	M	+	M	+	7
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mediastinal	M	+	M	+	+	+	+	+	+	+	8
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10
Spleen	+	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	+	10
<b>INTEGUMENTARY SYSTEM</b>											
Mammary Gland	+	M	+	+	M	M	M	+	M	+	5
Skin	+	+	+	+	+	+	+	+	+	+	10
<b>MUSCULOSKELETAL SYSTEM</b>											
Bone	+	+	+	+	+	+	+	+	+	+	10
<b>NERVOUS SYSTEM</b>											
Brain	+	+	+	+	+	+	+	+	+	+	10
<b>RESPIRATORY SYSTEM</b>											
Larynx	+	+	+	+	+	+	+	+	+	+	10

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WISTAR HAN RATS MALE	DAY ON TEST										* TOTALS
	0	0	0	0	0	0	0	0	0	0	
0 mg/m3	8	8	8	8	8	8	8	8	8	8	
	9	9	9	9	9	9	9	9	9	9	
ANIMAL ID	DAY ON TEST										* TOTALS
	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	0	
	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	
Lung	+	+	+	+	+	+	+	+	+	+	10
Nose	+	+	+	+	+	+	+	+	+	+	10
Trachea	+	+	+	+	+	+	+	+	+	+	10
<b>SPECIAL SENSES SYSTEM</b>											
Eye	+	+	+	+	+	+	+	+	+	+	10
Harderian Gland	+	+	+	+	+	+	+	+	+	+	10
<b>URINARY SYSTEM</b>											
Kidney	+	+	+	+	+	+	+	+	+	+	10
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	10
<b>SYSTEMIC LESIONS</b>											
Multiple Organ	+	+	+	+	+	+	+	+	+	+	10

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<b>WISTAR HAN RATS MALE</b>	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0
		8	8	8	8	8	8	8	8	8	8	8	8	8
<b>2 mg/m3</b>	ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	0	0
		1	1	1	1	1	1	1	1	1	1	1	1	1
		2	2	2	2	2	2	2	2	2	2	2	2	2
		0	0	0	0	0	0	0	0	0	0	0	1	0
		1	2	3	4	5	6	7	8	9	0			
<b>* TOTALS</b>														

**ALIMENTARY SYSTEM**

Liver + 1

**CARDIOVASCULAR SYSTEM**

NONE

**ENDOCRINE SYSTEM**

NONE

**GENERAL BODY SYSTEM**

NONE

**GENITAL SYSTEM**

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

Testes + + + + + + + + + + 10

**HEMATOPOIETIC SYSTEM**

Lymph Node, Bronchial M M M + M + + + + M 5

Lymph Node, Mediastinal + + + + + + + M + + 9

**INTEGUMENTARY SYSTEM**

NONE

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<b>WISTAR HAN RATS MALE</b>	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	0	0	0	0
		8	8	8	8	8	8	8	8	8	8	8	8	8
		9	9	9	9	9	9	9	9	9	9	9	9	9
<b>2 mg/m3</b>	ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	0	0
		1	1	1	1	1	1	1	1	1	1	1	1	1
		2	2	2	2	2	2	2	2	2	2	2	2	2
		0	0	0	0	0	0	0	0	0	0	0	1	1
		1	2	3	4	5	6	7	8	9	0			
													<b>* TOTALS</b>	

**MUSCULOSKELETAL SYSTEM**

NONE

**NERVOUS SYSTEM**

NONE

**RESPIRATORY SYSTEM**

Lung + + + + + + + + + + **10**

**SPECIAL SENSES SYSTEM**

NONE

**URINARY SYSTEM**

NONE

**SYSTEMIC LESIONS**

Multiple Organ + + + + + + + + + + **10**

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<b>WISTAR HAN RATS MALE</b>	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	
		8	8	8	8	8	8	8	8	8	8	
		9	9	9	9	9	9	9	9	9	9	
<b>15 mg/m3</b>	ANIMAL ID	0	0	0	0	0	0	0	0	0		
	1	1	1	1	1	1	1	1	1	1		
	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	<b>* TOTALS</b>

**ALIMENTARY SYSTEM**

NONE

**CARDIOVASCULAR SYSTEM**

NONE

**ENDOCRINE SYSTEM**

NONE

**GENERAL BODY SYSTEM**

NONE

**GENITAL SYSTEM**

Epididymis	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Testes	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**HEMATOPOIETIC SYSTEM**

Lymph Node, Bronchial	M	+	+	M	+	M	+	+	M	+	<b>6</b>
Lymph Node, Mediastinal	+	+	M	+	+	+	M	+	+	+	<b>8</b>

**INTEGUMENTARY SYSTEM**

NONE

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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
	ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 mg/m3		8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
		9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
		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									
<b>* TOTALS</b>																				

**MUSCULOSKELETAL SYSTEM**

NONE

**NERVOUS SYSTEM**

NONE

**RESPIRATORY SYSTEM**

Lung + + + + + + + + + + 9

**SPECIAL SENSES SYSTEM**

NONE

**URINARY SYSTEM**

NONE

**SYSTEMIC LESIONS**

Multiple Organ + + + + + + + + + + 10

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		0	0	0	0	0	0	0	0	0	0
<b>WISTAR HAN RATS MALE</b>	DAY ON TEST	0	0	0	0	0	0	0	0	0	0
		8	8	8	8	8	8	8	8	8	8
		9	9	9	9	9	9	9	9	9	9
	<b>30 mg/m3</b>										
	ANIMAL ID	0	0	0	0	0	0	0	0	0	0
		1	1	1	1	1	1	1	1	1	1
		6	6	6	6	6	6	6	6	6	6
		0	0	0	0	0	0	0	0	0	1
		1	2	3	4	5	6	7	8	9	0
<b>* TOTALS</b>											

**ALIMENTARY SYSTEM**

Esophagus	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Liver	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Pancreas	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Salivary Glands	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**CARDIOVASCULAR SYSTEM**

Blood Vessel	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Heart	+	+	+	+	+	+	+	+	+	+	<b>10</b>

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		0	0	0	0	0	0	0	0	0	0
<b>WISTAR HAN RATS MALE</b>	DAY ON TEST	0	0	0	0	0	0	0	0	0	0
		8	8	8	8	8	8	8	8	8	8
		9	9	9	9	9	9	9	9	9	9
	<b>30 mg/m3</b>										
	ANIMAL ID	0	0	0	0	0	0	0	0	0	0
		1	1	1	1	1	1	1	1	1	1
		6	6	6	6	6	6	6	6	6	6
		0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0	
<b>* TOTALS</b>											

**ENDOCRINE SYSTEM**

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Parathyroid Gland	M	+	+	+	M	M	+	+	+	+	<b>7</b>
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**GENERAL BODY SYSTEM**

NONE

**GENITAL SYSTEM**

Epididymis	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Preputial Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Prostate	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Testes	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**HEMATOPOIETIC SYSTEM**

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WISTAR HAN RATS MALE 30 mg/m3	DAY ON TEST										* TOTALS
	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	
	ANIMAL ID										
	0 1 6 0 1	0 1 6 0 2	0 1 6 0 3	0 1 6 0 4	0 1 6 0 5	0 1 6 0 6	0 1 6 0 7	0 1 6 0 8	0 1 6 0 9	0 1 6 0 0	
Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Bronchial	+	M	+	M	+	+	+	+	+	+	8
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mediastinal	+	M	+	+	+	+	+	+	+	+	9
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10
Spleen	+	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	+	10
<b>INTEGUMENTARY SYSTEM</b>											
Mammary Gland	+	+	M	M	M	M	+	M	M	M	3
Skin	+	+	+	+	+	+	+	+	+	I	9
<b>MUSCULOSKELETAL SYSTEM</b>											
Bone	+	+	+	+	+	+	+	+	+	+	10
<b>NERVOUS SYSTEM</b>											
Brain	+	+	+	+	+	+	+	+	+	+	10
<b>RESPIRATORY SYSTEM</b>											
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: 20701 - 01  
 Test Type: 90-DAY  
 Route: RESPIRATORY EXPOSURE NASAL  
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 Nanoscale material (Fullerene-C60 1 micron)  
 CAS Number: 99685-96-8

Date Report Requested: 02/22/2013  
 Time Report Requested: 07:58:31  
 First Dose M/F: 11/05/07 / 11/05/07  
 Lab: BNW

WISTAR HAN RATS MALE 30 mg/m3	DAY ON TEST										* TOTALS
	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	0 8 9	
	ANIMAL ID										
	0 1 6 0 1	0 1 6 0 2	0 1 6 0 3	0 1 6 0 4	0 1 6 0 5	0 1 6 0 6	0 1 6 0 7	0 1 6 0 8	0 1 6 0 9	0 1 6 0 0	
Lung	+	+	+	+	+	+	+	+	+	+	10
Nose	+	+	+	+	+	+	+	+	+	+	10
Trachea	+	+	+	+	+	+	+	+	+	+	10
<b>SPECIAL SENSES SYSTEM</b>											
Eye	+	+	+	+	+	+	+	+	+	+	10
Harderian Gland	+	+	+	+	+	+	+	+	+	+	10
<b>URINARY SYSTEM</b>											
Kidney	+	+	+	+	+	+	+	+	+	+	10
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	10
<b>SYSTEMIC LESIONS</b>											
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: 20701 - 01  
 Test Type: 90-DAY  
 Route: RESPIRATORY EXPOSURE NASAL  
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 Nanoscale material (Fullerene-C60 1 micron)  
 CAS Number: 99685-96-8

Date Report Requested: 02/22/2013  
 Time Report Requested: 07:58:31  
 First Dose M/F: 11/05/07 / 11/05/07  
 Lab: BNW

DAY ON TEST		0	0	0	0	0	0	0	0	0	0
<b>WISTAR HAN RATS FEMALE</b>		0	0	0	0	0	0	0	0	0	0
		8	8	8	8	8	8	8	8	8	8
<b>0 mg/m3</b>		9	9	9	9	9	9	9	9	9	9
		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
<b>* TOTALS</b>											

**ALIMENTARY SYSTEM**

Esophagus	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Liver	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Pancreas	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Salivary Glands	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Stomach, Forestomach	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**CARDIOVASCULAR SYSTEM**

Blood Vessel	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Heart	+	+	+	+	+	+	+	+	+	+	<b>10</b>

\* .. 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: 20701 - 01  
 Test Type: 90-DAY  
 Route: RESPIRATORY EXPOSURE NASAL  
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 Nanoscale material (Fullerene-C60 1 micron)  
 CAS Number: 99685-96-8

Date Report Requested: 02/22/2013  
 Time Report Requested: 07:58:31  
 First Dose M/F: 11/05/07 / 11/05/07  
 Lab: BNW

DAY ON TEST		0	0	0	0	0	0	0	0	0	0
<b>WISTAR HAN RATS FEMALE</b>		0	0	0	0	0	0	0	0	0	0
		8	8	8	8	8	8	8	8	8	8
		9	9	9	9	9	9	9	9	9	9
	<b>0 mg/m3</b>										
ANIMAL ID		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
<b>* TOTALS</b>											

**ENDOCRINE SYSTEM**

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Parathyroid Gland	+	+	+	+	+	+	M	+	+	+	<b>9</b>
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**GENERAL BODY SYSTEM**

NONE

**GENITAL SYSTEM**

Clitoral Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Ovary	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Uterus	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**HEMATOPOIETIC SYSTEM**

Bone Marrow	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Lymph Node, Bronchial	M	+	+	+	M	+	+	+	M	M	<b>6</b>

\* .. 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: 20701 - 01  
 Test Type: 90-DAY  
 Route: RESPIRATORY EXPOSURE NASAL  
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 Nanoscale material (Fullerene-C60 1 micron)  
 CAS Number: 99685-96-8

Date Report Requested: 02/22/2013  
 Time Report Requested: 07:58:31  
 First Dose M/F: 11/05/07 / 11/05/07  
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	
	8	8	8	8	8	8	8	8	8	8	
9	9	9	9	9	9	9	9	9	9	9	
WISTAR HAN RATS FEMALE											
0 mg/m3											
ANIMAL ID	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	
	<b>* TOTALS</b>										
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mediastinal	+	+	+	+	M	I	+	+	+	+	8
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10
Spleen	+	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	+	10
<b>INTEGUMENTARY SYSTEM</b>											
Mammary Gland	+	+	+	+	+	+	+	+	+	+	10
Skin	+	+	+	+	+	+	+	+	+	+	10
<b>MUSCULOSKELETAL SYSTEM</b>											
Bone	+	+	+	+	+	+	+	+	+	+	10
<b>NERVOUS SYSTEM</b>											
Brain	+	+	+	+	+	+	+	+	+	+	10
<b>RESPIRATORY SYSTEM</b>											
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: 20701 - 01  
 Test Type: 90-DAY  
 Route: RESPIRATORY EXPOSURE NASAL  
 Species/Strain: RATS/Wistar Han

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**  
 Nanoscale material (Fullerene-C60 1 micron)  
 CAS Number: 99685-96-8

Date Report Requested: 02/22/2013  
 Time Report Requested: 07:58:31  
 First Dose M/F: 11/05/07 / 11/05/07  
 Lab: BNW

		0	0	0	0	0	0	0	0	0	
DAY ON TEST		0	0	0	0	0	0	0	0	0	
WISTAR HAN RATS FEMALE	ANIMAL ID	8	8	8	8	8	8	8	8	8	
		9	9	9	9	9	9	9	9	9	
0 mg/m3	ANIMAL ID	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	
		0	0	0	0	0	0	0	0	1	
		1	2	3	4	5	6	7	8	9	0
<b>* TOTALS</b>											
Trachea		+	+	+	+	+	+	+	+	+	10
<b>SPECIAL SENSES SYSTEM</b>											
Eye		+	+	+	+	+	+	+	+	+	10
Harderian Gland		+	+	+	+	+	+	+	+	+	10
<b>URINARY SYSTEM</b>											
Kidney		+	+	+	+	+	+	+	+	+	10
Urinary Bladder		+	+	+	+	+	+	+	+	+	10
<b>SYSTEMIC LESIONS</b>											
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: 20701 - 01  
 Test Type: 90-DAY  
 Route: RESPIRATORY EXPOSURE NASAL  
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 Nanoscale material (Fullerene-C60 1 micron)  
 CAS Number: 99685-96-8

Date Report Requested: 02/22/2013  
 Time Report Requested: 07:58:31  
 First Dose M/F: 11/05/07 / 11/05/07  
 Lab: BNW

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>WISTAR HAN RATS FEMALE</b>	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
		9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
	<b>2 mg/m3</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ANIMAL ID	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		3	3	3	3	3	3	3	3	3	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	1
		1	2	3	4	5	6	7	8	9	0										
																			<b>* TOTALS</b>		

**ALIMENTARY SYSTEM**

Esophagus	+	1
Intestine Large, Cecum	+	1
Intestine Large, Colon	+	1
Intestine Large, Rectum	+	1
Intestine Small, Duodenum	+	1
Intestine Small, Ileum	+	1
Intestine Small, Jejunum	+	1
Liver	+	1
Pancreas	+	1
Salivary Glands	+	1
Stomach, Forestomach	+	1
Stomach, Glandular	+	1

**CARDIOVASCULAR SYSTEM**

Heart	+	1
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**ENDOCRINE SYSTEM**

\* .. 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: 20701 - 01  
 Test Type: 90-DAY  
 Route: RESPIRATORY EXPOSURE NASAL  
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 Nanoscale material (Fullerene-C60 1 micron)  
 CAS Number: 99685-96-8

Date Report Requested: 02/22/2013  
 Time Report Requested: 07:58:31  
 First Dose M/F: 11/05/07 / 11/05/07  
 Lab: BNW

WISTAR HAN RATS FEMALE	DAY ON TEST										* TOTALS			
	0	0	0	0	0	0	0	0	0	0				
2 mg/m3	ANIMAL ID													
	0	0	0	0	0	0	0	0	0	0				
	1	1	1	1	1	1	1	1	1	1				
	3	3	3	3	3	3	3	3	3	3				
	0	0	0	0	0	0	0	0	0	1				
	1	2	3	4	5	6	7	8	9	0				
Adrenal Cortex											+	1		
Adrenal Medulla												+	1	
Islets, Pancreatic												+	1	
Parathyroid Gland												+	1	
Pituitary Gland												+	1	
Thyroid Gland												+	1	
<b>GENERAL BODY SYSTEM</b>														
NONE														
<b>GENITAL SYSTEM</b>														
Clitoral Gland													+	1
Ovary													+	1
Uterus													+	1
<b>HEMATOPOIETIC SYSTEM</b>														
Bone Marrow													+	1
Lymph Node, Bronchial	M	+	M	M	M	+	+	+	M	+				5
Lymph Node, Mandibular													+	1

\* .. 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: 20701 - 01  
 Test Type: 90-DAY  
 Route: RESPIRATORY EXPOSURE NASAL  
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 Nanoscale material (Fullerene-C60 1 micron)  
 CAS Number: 99685-96-8

Date Report Requested: 02/22/2013  
 Time Report Requested: 07:58:31  
 First Dose M/F: 11/05/07 / 11/05/07  
 Lab: BNW

DAY ON TEST	0	0	0	0	0	0	0	0	0	0	ANIMAL ID		
	8	8	8	8	8	8	8	8	8	8			
<b>WISTAR HAN RATS FEMALE</b>	9	9	9	9	9	9	9	9	9	8			
<b>2 mg/m3</b>	0	0	0	0	0	0	0	0	0	0			
	1	1	1	1	1	1	1	1	1	1			
	3	3	3	3	3	3	3	3	3	3			
	0	0	0	0	0	0	0	0	0	1			
	1	2	3	4	5	6	7	8	9	0			<b>* TOTALS</b>
Lymph Node, Mediastinal	+	+	+	+	+	+	+	+	+	+			<b>10</b>
Lymph Node, Mesenteric										+			<b>1</b>
Spleen										+			<b>1</b>
Thymus										+			<b>1</b>
<b>INTEGUMENTARY SYSTEM</b>													
Mammary Gland											+		<b>1</b>
Skin											+		<b>1</b>
<b>MUSCULOSKELETAL SYSTEM</b>													
Bone											+		<b>1</b>
<b>NERVOUS SYSTEM</b>													
Brain											+		<b>1</b>
<b>RESPIRATORY SYSTEM</b>													
Larynx											+		<b>1</b>
Lung	+	+	+	+	+	+	+	+	+	+			<b>10</b>
Nose											+		<b>1</b>
Trachea											+		<b>1</b>

\* .. 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: 20701 - 01  
 Test Type: 90-DAY  
 Route: RESPIRATORY EXPOSURE NASAL  
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 Nanoscale material (Fullerene-C60 1 micron)  
 CAS Number: 99685-96-8

Date Report Requested: 02/22/2013  
 Time Report Requested: 07:58:31  
 First Dose M/F: 11/05/07 / 11/05/07  
 Lab: BNW

		0	0	0	0	0	0	0	0	0	0
<b>WISTAR HAN RATS FEMALE</b>	DAY ON TEST	0	0	0	0	0	0	0	0	0	0
		8	8	8	8	8	8	8	8	8	8
		9	9	9	9	9	9	9	9	9	8
	<b>2 mg/m3</b>										
<b>ANIMAL ID</b>		0	0	0	0	0	0	0	0	0	
		1	1	1	1	1	1	1	1	1	
		3	3	3	3	3	3	3	3	3	
		0	0	0	0	0	0	0	0	0	1
		1	2	3	4	5	6	7	8	9	0
<b>* TOTALS</b>											

**SPECIAL SENSES SYSTEM**

Eye	+	1
Harderian Gland	+	1

**URINARY SYSTEM**

Kidney	+	1
Urinary Bladder	+	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  
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Experiment Number: 20701 - 01  
 Test Type: 90-DAY  
 Route: RESPIRATORY EXPOSURE NASAL  
 Species/Strain: RATS/Wistar Han

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**  
 Nanoscale material (Fullerene-C60 1 micron)  
 CAS Number: 99685-96-8

Date Report Requested: 02/22/2013  
 Time Report Requested: 07:58:31  
 First Dose M/F: 11/05/07 / 11/05/07  
 Lab: BNW

<b>WISTAR HAN RATS FEMALE</b>	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0
		8	8	8	8	8	8	8	8	8	8	8	8	8
<b>15 mg/m3</b>	ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	0	0
		1	1	1	1	1	1	1	1	1	1	1	1	1
		5	5	5	5	5	5	5	5	5	5	5	5	5
		0	0	0	0	0	0	0	0	0	0	0	1	0
		1	2	3	4	5	6	7	8	9	0			
<b>* TOTALS</b>														

**ALIMENTARY SYSTEM**

NONE

**CARDIOVASCULAR SYSTEM**

NONE

**ENDOCRINE SYSTEM**

NONE

**GENERAL BODY SYSTEM**

NONE

**GENITAL SYSTEM**

NONE

**HEMATOPOIETIC SYSTEM**

Lymph Node, Bronchial	M	+	M	+	+	+	+	+	+	M	<b>7</b>
Lymph Node, Mediastinal	+	+	I	+	+	I	+	+	+	+	<b>8</b>

**INTEGUMENTARY SYSTEM**

NONE

**MUSCULOSKELETAL SYSTEM**

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 + .. Tissue examined microscopically  
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 I .. Insufficient tissue

M .. Missing tissue  
 A .. Autolysis precludes evaluation  
 BLANK .. Not examined microscopically

Experiment Number: 20701 - 01  
 Test Type: 90-DAY  
 Route: RESPIRATORY EXPOSURE NASAL  
 Species/Strain: RATS/Wistar Han

**P04: NEOPLASMS BY INDIVIDUAL ANIMAL**  
 Nanoscale material (Fullerene-C60 1 micron)  
 CAS Number: 99685-96-8

Date Report Requested: 02/22/2013  
 Time Report Requested: 07:58:31  
 First Dose M/F: 11/05/07 / 11/05/07  
 Lab: BNW

<b>WISTAR HAN RATS FEMALE</b>	DAY ON TEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		8	8	8	8	8	8	8	8	8	8	8	8	8	8
<b>15 mg/m3</b>	ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
		5	5	5	5	5	5	5	5	5	5	5	5	5	5
		0	0	0	0	0	0	0	0	0	0	0	0	1	0
		1	2	3	4	5	6	7	8	9	0				
<b>* TOTALS</b>															

NONE

**NERVOUS SYSTEM**

NONE

**RESPIRATORY SYSTEM**

Lung + + + + + + + + + +

10

**SPECIAL SENSES SYSTEM**

NONE

**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: 20701 - 01  
 Test Type: 90-DAY  
 Route: RESPIRATORY EXPOSURE NASAL  
 Species/Strain: RATS/Wistar Han

P04: NEOPLASMS BY INDIVIDUAL ANIMAL  
 Nanoscale material (Fullerene-C60 1 micron)  
 CAS Number: 99685-96-8

Date Report Requested: 02/22/2013  
 Time Report Requested: 07:58:31  
 First Dose M/F: 11/05/07 / 11/05/07  
 Lab: BNW

WISTAR HAN RATS FEMALE	DAY ON TEST										* TOTALS
	0	0	0	0	0	0	0	0	0	0	
30 mg/m3	8	8	8	8	8	8	8	8	8	8	
	9	9	9	9	9	9	9	9	9	9	
ANIMAL ID	DAY ON TEST										* TOTALS
	0	0	0	0	0	0	0	0	0	0	
	1	1	1	1	1	1	1	1	1	1	
	7	7	7	7	7	7	7	7	7	7	
	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	

**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

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DAY ON TEST		0	0	0	0	0	0	0	0	0	0
<b>WISTAR HAN RATS FEMALE</b>		0	0	0	0	0	0	0	0	0	0
		8	8	8	8	8	8	8	8	8	8
		9	9	9	9	9	9	9	9	9	9
<b>30 mg/m3</b>	ANIMAL ID	0	0	0	0	0	0	0	0	0	0
		1	1	1	1	1	1	1	1	1	1
		7	7	7	7	7	7	7	7	7	7
		0	0	0	0	0	0	0	0	0	1
		1	2	3	4	5	6	7	8	9	0
<b>* TOTALS</b>											

**ENDOCRINE SYSTEM**

Adrenal Cortex	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Adrenal Medulla	+	+	+	+	+	M	+	+	+	+	<b>9</b>
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Parathyroid Gland	+	+	+	+	M	+	+	+	+	+	<b>9</b>
Pituitary Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Thyroid Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**GENERAL BODY SYSTEM**

NONE

**GENITAL SYSTEM**

Clitoral Gland	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Ovary	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Uterus	+	+	+	+	+	+	+	+	+	+	<b>10</b>

**HEMATOPOIETIC SYSTEM**

Bone Marrow	+	+	+	+	+	+	+	+	+	+	<b>10</b>
Lymph Node, Bronchial	M	+	+	+	+	M	+	M	M	M	<b>5</b>

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DAY ON TEST	0	0	0	0	0	0	0	0	0	0	
	8	8	8	8	8	8	8	8	8	8	
WISTAR HAN RATS FEMALE	9	9	9	9	9	9	9	9	9	9	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	
	1	1	1	1	1	1	1	1	1	1	
30 mg/m3	7	7	7	7	7	7	7	7	7	7	
	0	0	0	0	0	0	0	0	0	1	
	1	2	3	4	5	6	7	8	9	0	* TOTALS
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mediastinal	M	+	+	+	+	+	+	+	+	+	9
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10
Spleen	+	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	+	10
<b>INTEGUMENTARY SYSTEM</b>											
Mammary Gland	+	+	+	+	+	+	+	+	+	+	10
Skin	+	+	+	+	+	+	+	+	+	+	10
<b>MUSCULOSKELETAL SYSTEM</b>											
Bone	+	+	+	+	+	+	+	+	+	+	10
<b>NERVOUS SYSTEM</b>											
Brain	+	+	+	+	+	+	+	+	+	+	10
<b>RESPIRATORY SYSTEM</b>											
Larynx	+	+	+	+	+	+	+	+	+	+	10
Lung	+	+	+	+	+	+	+	+	+	+	10
Nose	+	+	+	+	+	+	+	+	+	+	10

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		0	0	0	0	0	0	0	0	0	
DAY ON TEST		0	0	0	0	0	0	0	0	0	
<b>WISTAR HAN RATS FEMALE</b>		8	8	8	8	8	8	8	8	8	
<b>30 mg/m3</b>		9	9	9	9	9	9	9	9	9	
ANIMAL ID		0	0	0	0	0	0	0	0	0	
		1	1	1	1	1	1	1	1	1	
		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
<b>* TOTALS</b>											
Trachea		+	+	+	+	+	+	+	+	+	10
<b>SPECIAL SENSES SYSTEM</b>											
Eye		+	+	+	+	+	+	+	+	+	10
Harderian Gland		+	+	+	+	+	+	+	+	+	10
<b>URINARY SYSTEM</b>											
Kidney		+	+	+	+	+	+	+	+	+	10
Urinary Bladder		+	+	+	+	+	+	+	+	+	10
<b>SYSTEMIC LESIONS</b>											
Multiple Organ		+	+	+	+	+	+	+	+	+	10

\*\*\* END OF REPORT \*\*\*

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